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The Journal of the Fire Protection Profession Since 1877

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DECEMBER, 1940

Vol. 93, No. 12

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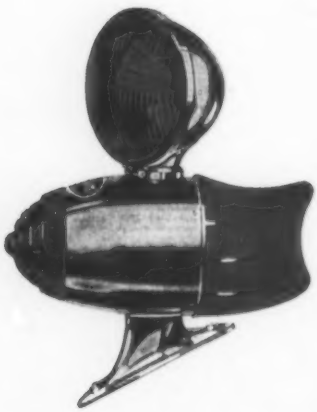

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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor
N. N. WOLPERT, *Assistant Editor*

Merry Christmas!

ONCE more it is our privilege and our pleasure to extend warmest greetings of the season to our many good friends throughout the fire field.

• This year, perhaps more than at any other time in all the history of the world, we can truly appreciate what it means to be living in peace and happiness.

• If only the spirit of Christmas could be projected across the water to all the unhappy warring peoples of the world!

• Let us hope that before another year rolls 'round, the same Christmas spirit that has prompted so many fire departments to devote their services to the repair and redistribution of old toys so that little children may be made happy, will be projected far and wide, across the seas, until all the world again is happy!

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the tenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York City, also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price U.S. and Latin America, $2 a year; Canada, $2.50; Foreign, $3; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1940, by Case-Shepperd-Mann Publishing Corp. ¶KARL M. MANN, President; I. HERBERT CASE, Vice-President and General Manager; ALFRED J. HOUGHTON, Eastern Representative; WM. H. TOPHAM, Circulation Manager; H. S. ESSEX, Production Manager. CHICAGO OFFICE: W. S. CLEVENGER, L. M. ROCHE, 6 No. Michigan Ave.; SAN FRANCISCO: CHARLES H. WOOLLEY, 444 Market Street; LOS ANGELES: AUGUST HAURIN, D. F. HARNER, 6000 Miramonte Blvd. ¶Printed in U.S.A.

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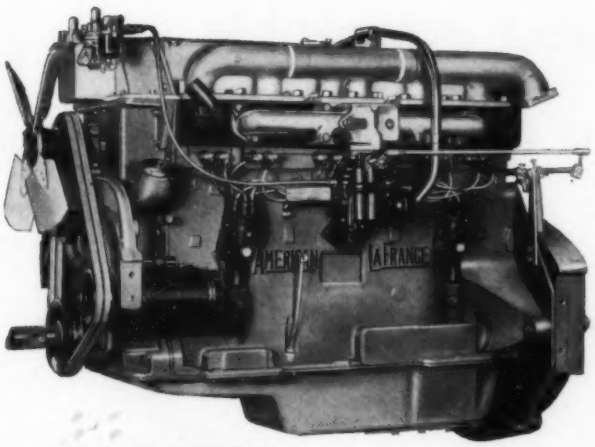

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FIRE ENGINEERING

DECEMBER, 1940 VOL. 93. NO. 12

With the Editor

Army Orders Fill Apparatus Plants The U. S. Army has already placed orders with fire apparatus manufacturers totalling between three hundred and fifty and four hundred fire engines. As a result, practically all plants are running at full capacity, and deliveries of municipal orders have slowed up.

The Navy still has to buy fire apparatus for its many bases, so that congestion in fire apparatus factories will be even more severe.

While deliveries of machines for cities may today take 120 days, this period will increase rather than decrease as time goes on. And if municipal purchases, now at low ebb, pick up, chaos in the industry may result.

As asserted in these columns several times during the year, congestion in fire apparatus plants is surely approaching. Only orders placed during the next few months can be assured of reasonably prompt delivery. After that time, if war comes nearer our shores, deliveries will be mighty slow coming through. Far sighted municipal officials will place their orders now.

Although we are interested in the welfare of the fire apparatus industry, our continual urging of early purchase is done solely with the conviction that fire engine builders will not be able to handle promptly the rush of orders which now seem surely headed their way.

We are not trying to stampede orders to them; rather we fear, in view of developments in modern aerial warfare, a situation even worse in the industry than was experienced in the last world war, when fire apparatus plants were severely congested. Only by buying promptly can cities expect early delivery.

Ambulances For British Firemen Elsewhere in this issue, Roy B. Woolley makes a suggestion that deserves serious thought on the part of those whose wishes are with Great Britain and her heroic fire fighters. What a fine gesture it would be for the Fire Service in this country to provide the intrepid firemen of our sister nation across the sea with modern ambulances! It would be a useful gift, and would serve as evidence of our sympathy for a great nation that is putting up a courageous fight against the forces of the dictators.

Fred Shepperd

Hours of Work of Municipal Firemen in the United States

By CAROL P. BRAINERD and GERALD M. WHITRIGHT*

HOURS of work for firemen vary greatly from city to city. Since adequate fire protection has to be provided at all times, a large enough force must always be on duty to take care of ordinary needs and be able to meet emergencies. This has resulted in the development of a considerable number of different systems of operation calling for various periods of duty. In some small communities, the hours of duty are practically continuous, and the firemen are obliged to live at or near the fire station, where they are on call at all times. Some small cities and towns have volunteer fire departments, whose members are not paid but who are subject to call as required. There are occasional examples of combinations of paid and volunteer units within a city.

Trend Toward Shorter Hours

In general, the actual system of operation used depends to some extent upon customs in an area, but to a greater extent on the size and financial condition of the city. Continuous or nearly continuous duty is not practical in cities of any appreciable size. Platoon systems have been introduced to avoid the necessity of continuous duty. In the simplest platoon systems the firemen usually work one or a few days continuously, and then have a full twenty-four hours off duty. Other platoon systems have been developed in which one group works ten hours during the daytime for several days, and then changes over to fourteen hours of night duty. Such systems require a twenty-four hour period of duty for one platoon, and provide a leave period of twenty-four hours for the other, at each period of change from day to night duty.

There has been a steady but gradual trend toward the elimination of all twenty-four-hour periods of duty. In some large cities, platoon systems have been devised which completely eliminate the twenty-four-hour period of duty, and there is one which provides for an eight-hour day for each fireman, with one day off each week. The introduction and establishment of these modern and complicated systems present many problems to city officials. In the first place, the cost increases sharply when hours are reduced, because of the additional personnel needed.

Organization Problem Is Complex

For example, the number of firemen needed in a system providing an eight-hour day is about two-thirds greater than for the system in which two full days on duty is followed by one day off. Secondly, the problem of organization and personnel training is complicated by any change of system which reduces the hours and increases the number of men required. Certain specific requirements as to the number of consecutive hours on duty and days off are often imposed by law, and any change involves months of detailed planning to meet these legal requirements and still provide at all times the requisite number of firemen in each grade and occupational classification. Budgetary considerations are frequently the controlling factor in determining the system of operation, but the general tendency is toward shorter hours and more regular periods of duty.

Study of Firemen's Hours

A comprehensive study of firemen's wages, hours, and working conditions is being conducted by the Division of Construction and Public Employment of the Bureau of Labor Statistics, in cooperation with the Work Projects Administration. Data have been collected and tabulated for fire departments in cities having 25,000 inhabitants and more. Three hundred and sixty-seven of the 377 cities of this size in the country have reported complete data as of July 1, 1938. The results of this survey will be published in a series of reports, one for the United States as a whole, and one giving details by cities for each of nine regions. Other subjects to be included in the reports are: Disabling injuries, promotion of lower-grade privates, vacations with pay, items supplied firemen, and volunteer and call systems. The general subject of the hours of work in various types of platoon systems is presented here.

Single-Platoon System

The single-platoon system ranks next to continuous service with respect to the length of the workweek. Firemen working under one type of single-platoon system are on duty 144 hours per week, as compared with 168 hours for the full week of continuous service. In this type, the fireman is on duty twenty-four hours a day for six days and then has one day of leave. If there were seventy firemen on the force, ten of them could take their day of leave on each day of the week in succession. Thus six-sevenths of the force would be on duty at all times.

Variation of Single Platoon

In another common variation of the single-platoon system, the members of the force are on duty for two days and then off for one. Under this plan, the fireman works fourteen full days in a period of three weeks, making an average workweek of 4.7 days or 112 hours. The period of three weeks is taken as a basis for computing all averages, because not until this period of twenty-one days is completed does the fireman have a workweek which is identical in all respects to the work week of a preceding week.

For instance, if a member of the force started to work on Monday at 8 a.m., at the same time in the following week he would be at the midpoint of a forty-eight-hour period of duty. Monday of the next week would be his day off. However, on Monday morning of the fourth week, he starts his second cycle, which is identical in all respects to the first twenty-one days. In the first and second week he has two days off in each, and in the third week he has three days off.

The shortest workweek under the single-platoon system occurs in a variation in which the pattern is one day on and two days off, but this type

*Prepared under the supervision of Herman B. Byer, Chief, Division of Construction and Public Employment, Bureau of Labor Statistics, U. S. Department of Labor. Article taken from the "Monthly Labor Review" of the Bureau of Labor Statistics.

is not common. The average hours worked in this type are fifty-six per week.

Double-Platoon System

By far the greatest number of firemen work under what is called the double-platoon system, and there are about a half a dozen important types of this system. The simplest is one in which one platoon of firemen is on duty twenty-four hours without interruption, and then off duty for twenty-four hours. The second platoon merely alternates with the first in order to maintain continuous fire-protection service. This system is still generally used in many parts of the country because of its simplicity of operation, particularly in smaller departments where limited personnel does not permit more complicated systems. Its primary disadvantage is that the fireman has to be on duty twenty-four hours a day every other day.

Firemen's hours are usually long because of the nature of the work, and they are likely to be irregular regardless of the type of system used. Many efforts have been made to relieve firemen from the long twenty-four-hour periods of duty. The term "tour" is applied to any period of consecutive hours on duty or off duty. The word "shift," as used in fire departments throughout the country, usually refers to the time when one group or platoon of firemen relieves the platoon which has just completed a tour. One of the most common of the double-platoon systems reduces the number of twenty-four-hour tours by one-half (as compared with the twenty-four-hours-on and twenty-four-hours-off plan). A brief examination of the operation of this type of double-platoon system will illustrate the difficulty involved in reducing the long tours, and it will show clearly the irregularity in the hours of work. It may be designated as a simple double-platoon system with the shift on the third day.

Characteristic Differences

The characteristic which differentiates this type of double-platoon system from others is that the twenty-four-hour tour of duty comes on the third day and the twenty-four hours off duty comes on the sixth day. For example, if a fireman on one of the platoons starts to work on Monday morning he works ten hours during the day, from 8 o'clock in the morning to 6 in the evening. On Tuesday he has the same schedule, but on Wednesday at 8 in the morning he starts his first twenty-four-hour tour of duty. The next three days (Thursday, Friday, and Saturday) he is off duty during the same hours he worked the first three days. Thursday evening at 6 o'clock, he starts a fourteen-hour tour which lasts until 8 the next morning. Friday he repeats the same schedule, but when he finishes the fourteen-hour tour on Saturday morning, he begins his twenty-four-hour period off duty. A six-day cycle is then completed, and on Sunday morning he starts an identical cycle of six days, except for the fact that it begins on Sunday instead of Monday. The irregularity of his hours is shown by the following chart which describes his time on and off duty during each six-day period. There are approximately sixty-one of these six-day periods in each year. During each week the fireman working under this system works an average of 84 hours, or approximately 5.8 days per week of 14.4 hours each day.

Chart 1—Two-Platoon System—Shift on 3d Day

Day	Platoon No. 1	Platoon No. 2
1...	XXXXXXXXXX	XXXXXXXXXXXXXX
2...	XXXXXXXXXX	XXXXXXXXXXXXXX
3...	XXXXXXXXXXXXXXXXXXXXXXX	* *
4...	XXXXXXXXXXXXXXX	XXXXXXXXXX
5...	XXXXXXXXXXXXXX	XXXXXXXXXX
6...	* *	XXXXXXXXXXXXXXXXXXXXXXXX

X represents 1 hour on duty; blank spaces represent 10 or 14 hours off duty. Asterisks (* * *) represent 24 hours off duty.

Not only are the hours of work irregular, but the character of the workweek is also irregular. For example, the first week begins with a ten-hour day, the third week begins with a twenty-four-hour tour of duty, the sixth week begins with a period of twenty-four hours off duty. Not until the seventh week does the fireman experience a workweek which is identical in all respects with any of the first six weeks. His identical weeks are always six weeks apart.

Shifting of Platoons

It is after the first 24-hour tour of Platoon No. 1 that the two platoons shift. That is, this twenty-hour hours on duty by Platoon No. 1 and twenty-four hours off duty for Platoon No. 2, falling on the third day in this case, introduces a change in the type of hours for each platoon. Platoon No. 1, which had been working ten hours in the day time for two days before the long tour, is then on duty fourteen hours running through the night for two days. Platoon No. 2, of

Once a Fireman—Always a Fireman

This photograph of a parade of the Utica, N. Y., Fire Department was taken in the middle eighties. It is of particular interest in that it illustrates the old adage that "Once a fireman—always a fireman." The youngster in the baby carriage at the lower right is none other than Joseph N. Sullivan, now Chief of the Utica, N. Y., Fire Department, and Past-President of the International Association of Fire Chiefs. Joseph, along with his older brother standing alongside the carriage, and his mother (at the handle) are admiring the head of the family, Chief D. J. Sullivan, who is seated on the combination wagon in the lower left hand corner of the picture. Even at this early day, Chief Joseph N. showed an intense interest in the fire service.

course, works the opposite tours. Thus, the twenty-four-hour tours are always a signal for a shift in the platoons.

Days on Duty

The various types of double-platoon systems differ primarily in the number of days worked before the twenty-four-hour tour is introduced to shift a platoon from one set of hours to the other. Shifts on the third, fourth, fifth, sixth, seventh, or eighth day are common in fire departments throughout the country. If no additional time off is granted, the firemen in these cases work eighty-four hours a week. When additional time off each week is given, the hours worked are usually seventy-two per week. This occurs in several states where state laws provide for one full day of leave per week for all firemen.

Ten-Group System (Double-Platoon)

There is a type of double-platoon system which completely eliminates the twenty-four-hour tour. It is called the "ten-group or elimination system." It is called the "elimination system" because it eliminates the necessity for any twenty-four-hour tours of duty for the firemen. The operation of one of these systems follows.

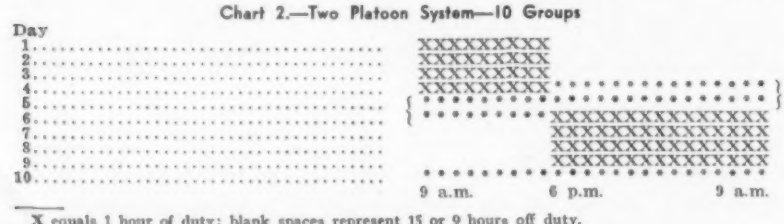
The tours of duty for the first platoon are from 9 a.m. to 6 p.m. and for the second platoon from 6 p.m. to 9 a.m. The entire force of firemen is divided into ten groups, and the groups are so combined for duty that continuous service is maintained with the maximum personnel at all times. The pattern of the hours of duty and time off repeats itself every ten days. During these ten days, each firemen has eight tours of duty and two long tours off. The eight tours of duty consist of four nine-hour tours, and four fifteen-hour tours, a total of ninety-six hours in ten days, or an average of nine hours and thirty-six minutes per day.

Hours of Leave

Every ten days each member receives one forty-eight-hour leave and one twenty-four leave. He is also off duty three nine-hour periods and three fifteen-hour periods, making a total of 144 hours off and ninety-six hours on. On each day, the ten groups are arranged so that the members of one group are on twenty-four leave, members of another group are about in the middle of their forty-eight-hour leave, members of four groups are working a nine-hour tour of duty, and members of four groups are working a fifteen-hour tour. Members of most ten-group elimination double-platoon systems work about sixty-eight hours per week. An illustration of this system is shown:

(*To be continued*)

Chart 2.—Two Platoon System—10 Groups



X equals 1 hour of duty; blank spaces represent 15 or 9 hours off duty.
Asterisks (* * *) represent leave periods of 24 or 48 hours.

QUINCY, ILL., CUTS FORCE TO SAVE PAYROLL COSTS

Supreme Court Rules that Law to Increase Firemen's Pay is Legal, Finds City with Insufficient Funds

By Earl Nolan

NINETEEN firemen and thirteen policemen were discharged from the fire and police departments at Quincy, Ill., on November 7, by Mayor Leo W. Lenane on authority of the city council, because of the city's inability to meet the $175 monthly salary as required by a state law, which was held constitutional by the state supreme court. As a result, three fire stations were closed and three engine companies were decommissioned.

Law Enacted in 1937

In July, 1937, the state legislature enacted into law an act requiring that firemen and policemen in cities from 10,000 to 25,000 population, be paid $150 a month and in cities of more than 25,000 population, $175 a month. The latter schedule affected Quincy.

Several municipalities participated in a test case and the Supreme Court upheld the law and later ruled that it was unconstitutional and finally, on a re-hearing, decided the measure was constitutional. The legislature then adopted an admendment to the law making the wage laws inoperative unless they were approved by referenda.

During the two years the cases were before the Supreme Court, July, 1937, to July, 1939, the police and fire departments were kept at full strength and had accumulated a back debt in wages to the fire fighters and policemen totaling $148,000. Practically all members of both departments (there were a few exceptions) joined and sued the city for the back wages and obtained judgments.

After this action, the Supreme Court held that the voiding amendment was unconstitutional, thus adding about $90,000 more to the back wage debt, for which practically all of the men discharged have sued for. This case is scheduled for hearing in Circuit Court possibly the latter part of this month or early in January.

During the two years the case was before the Supreme Court, firemen and policemen in Quincy worked full time, with the exception of several months when they took ten days off a month under waivers they signed agreeing to work at the old scale. These waivers were held by Circuit Judge Fred G. Wolfe of Quincy to be evasions on the part of the city to avoid paying the $175 a month.

Budget Did Not Provide Funds

Because the present budget of the city of Quincy does not provide for the $175 a month, there was nothing else for officials to do but to slash the police and fire departments to make the budget come within the state minmum wage.

Discharging of nineteen firemen, many of them driver and pump operators, caused Chief George Simon to close three stations and to take three engines out of active service. Other companies were re-assigned and in two cases, only two men ride the machines on each shift. Other squad, ladder and engine companies are maintained at full strength. All companies were reassigned new running districts, all of which were greatly enlarged.

No officer of either department was affected. It was necessary, however, to create a fourth Assistant Chief in the fire department. This was done by making Clarence Lagemann, Master Mechanic of the department, an Assistant Chief.

Incidentally, as a result of the wage law, the chiefs and officers of both departments are on the same wage base as their men because the state law states that no appointive officer's salary can be increased while he is in office. This situation will probably be taken care of when the new council meets in May and prepares a new budget.

Many cities affected by the law have

(*Continued on page 626*)

Fire Prevention and Fire Fighting in

Chemical Plants

By H. B. SUITER
Fire Chief, Merck & Co., Rahway, N. J.

CHEMICAL fires are dangerous, because of the violence with which certain chemicals react. This refers to the solid, liquid or gaseous chemicals whose reactions under high temperatures are violent or which produce compounds dangerous to life.

Each Chemical Reacts Differently

Different chemicals react in different ways under the same fire exposure. The burning of some chemicals such as chloroform, or red phosphorous, results in the formation of poisonous fumes which may cause death or serious illness if inhaled. Other chemicals, such as powdered magnesium, aluminum or even finely powdered zinc, may upon contact with a small amount of water, generate enough heat to ignite combustible material, while sodium or potassium metals would explode on contact with water, scattering burning particles in all directions.

Yellow phosphorous will burst into flame when exposed only a short time to the air, and may even explode, scattering burning particles which would start a fire, or cause bad burns to those nearby.

Bromine, nitric acid, or potassium permanganate, in contact with organic matter, will generate enough heat to cause a fire; other chemicals such as chlorates will ignite by friction or concussion, while still others, such as nitrates, because of their oxygen content, will promote rapid combustion.

Gases in Cylinders Are Hazardous

Dangerous gases in cylinders, (many of which are used in industry) will become very dangerous in a fire even though equipped with safety fusible plugs. Cylinders of acetylene and oxygen used in welding would tend to increase the intensity of a fire, while others such as sulfur dioxide, ammonia, hydrogen cyanide, hydrogen sulfide, phosgene, and chlorine are, on account of their irritating and poisonous fumes, provide a real danger to fire fighters. Even non-poisonous fumes cause death by displacing oxygen from the air.

A great many liquids such as certain acids, benzol, carbon disulfide, carbon tetrachloride, bromine and metallic mercury, give off dangerous poisonous fumes which greatly increase when their temperatures are raised.

H. B. Suiter

Flammable Liquids

Chemical industries today are using a greater variety of flammable solvents, and in much larger quantities than heretofore. For that reason the problem of handling such solvents is greatly increased.

Following are some of the most commonly used flammable solvents: acetone, alcohol (various kinds), amyl acetate, aniline oil, benzin (petroleum ether), benzol (benzene), carbon disulfide, collodion, ether, ethyl formate, ethyl nitrite, gasoline, paraldehyde, pyridine, toluol, and xylene.

Storage

Tanks should be preferably below the ground, but where above ground, they should be a good distance from other buildings or tanks, and properly diked to prevent spread of fire. Adequate explosion-proof relief valves should be installed on any closed tank that might be subjected to heat, and should be of a size to give ample relief in a fire.

Dangerous Dry Chemicals

Here is a list of some dry chemicals with notes illustrating what to guard against:

Acid chromic (chromium trioxide)—keep away from water, acids or alkaline solutions.

Ammonium dichromate—readily combustible.

Ammonium nitrate—keep away from chlorates and nitrites.

Antimony sulfide black powder—very dangerous if mixed with chlorates.

Barium chlorate—see potassium chlorate.

Barium dioxide anhydrous—keep in glass or metal air-tight containers. Generates heat on exposure to air or when mixed with certain other chemicals.

Calcium carbide—keep away from water, heats and gives off poisonous flammable gas.

Magnesium powder, granular or turnings—keep away from acids or alkaline solutions and from oxidizing materials.

Aluminum powder—same as previous precautions.

Naphthalene—burns with intense heat, gives off clouds of black smoke.

Nitrates (all kinds)—dangerous in a fire and when mixed with organic material will explode.

Potassium Chlorate—keep away from acids, organic matter and ammonium salts. Great care should be observed in handling as dangerous explosions are liable to occur when it is heated or subjected to concussion, or mixed with organic substances such as cork dust, tannic acid, sugar, charcoal, sulfur, sulfides, hypophosphites, reduced iron, or other easily oxidizable substances.

Potassium nitrite—keep away from ammonia salts, and finely divided organic matter.

Potassium permangante—keep away from all organic liquids, especially glycerine and aldehydes. Great caution should be used in handling as dangerous explosions are liable to occur when it is brought into contact with organic or other readily oxidizable substances, either in solution or in dry condition.

Sodium chlorate—same risks as potassium chlorate.
Sodium nitrite—keep away from ammonia compounds.
Zinc dust or powder—keep away from acids or alkaline solutions.

Group the Chemicals

From the foregoing we learn that to mix certain chemicals might prove dangerous. It is therefore advisable to separate them into classes and store them in separate buildings or sheds. For example:

Class 1—We would store the bromates, chlorates and nitrites.

Class 2—Acid chromic, ammonium dichromate, barium dioxide, the nitrates, permanganates, and persulfates.

Class 3—In this class we would put all the metal powders such as aluminum, magnesium, potassium, sodium and zinc, also other chemicals such as antimony sulfide, naphthalene, phosphorous red and the yellow sticks, zinc phosphide and calcium carbide. The building where these articles are stored and handled must not have a sprinkler system or, in fact, no water connections of any kind, as metals such as potassium or sodium will explode on contact with water.

Now that we have some idea of what may be found in chemical plants, the next thing to consider is how to prevent fires.

Fire Prevention in Plants

Fire prevention should be of utmost importance in any plant, but more particularly in chemical plants because of the rapidity with which a fire might spread, especially if flammable liquids or certain dangerous solids should be involved. Therefore, careful consideration must be given to the type of buildings, electrical equipment, machinery, knowledge of processes, ventilation, training of workers, and static electricity.

Buildings should be of fireproof construction and where flammable liquids or explosive solids are handled, they should be equipped with explosion windows or other suitable vents.

Electrical equipment should be of the explosion-proof type.

Special attention must be given all processes involving flammable liquids or solids.

Ventilation of fumes must be accomplished by suction blowers, with ducts close to the floor as well as in the upper part of the room. Most flammable liquid fumes are heavier than air at ordinary temperatures; however in certain operations where they may be heated, they will rise like steam until they become cooled, when they will return to the floor level.

Thorough training of all workers is most important.

Static electricity is recognized as an acute hazard in storage and use of flammable liquids, and has been known to cause fires and explosions in certain dusts. When flammable liquids are poured or discharged from one container to another, very often large accumulations of static electricity are found on the container being emptied and the one being filled.

The generation of static cannot be prevented, but dangerous accumulations can be avoided by grounding all metal tanks, etc., to a water pipe or other low resistance ground. All pulleys, shafting, belts and other moving parts of machinery should be grounded.

If you desire to learn more about this subject, see Bulletin 368 "Static Electricity" which may be obtained from the United States Department of Commerce, Bureau of Mines, Washington, D. C.

Watchmen

There should be regular inspection of plant buildings and proper patrolling of the premises by competent watchmen at night, and when the plant is shut down, careful consideration should be given to fire prevention.

The primary qualifications for a watchman is that he should be of good character, sober, intelligent, honest and faithful. He should be strong, able-bodied and active, with all faculties unimpaired, and trained to handle any probable emergency. He must perform his regular duties satisfactorily; but above all, he should be a man, who in case of fire, will act calmly, promptly and with good judgment. A regular workman refers doubtful things to his foreman; a watchman, being alone, must decide for himself.

Fire Extinguishment and Equipment

It is always desirable to catch a fire in its incipiency, and for this purpose fire extinguishers should be so placed as to be readily accessible. They should be of a type intended to cope with the particular fire which might be expected.

In order to express the relative values of first aid fire appliances, Underwriters Laboratories have adopted the following classification plan:

Class "A" Fires may be defined as incipient fires in ordinary combustible material where the quenching and cooling effects of water is of first importance.

Class "B" Fires may be defined as incipient fires in small quantities of flammable liquids, greases, etc., where a blanketing effect is essential.

Class "C" Fires may be defined as incipient fires in electrical equipment where the use of non-conducting extinguishing agent is of first importance.

Sprinkler Protection

All plant buildings, wherever practical, should be equipped with an approved sprinkler system.

Hose houses with hydrants and sufficient hose to reach all nearby buildings, should be placed at intervals through the plant.

All underground piping for sprinkler and hydrant service should be looped in such a manner as to provide sectional shut off valves; if anything happened to necessitate closing the sprinklers on a building, this could be done without closing the sprinkler protection on the entire plant.

A well organized and trained fire brigade is essential, the strength of the brigade, amount of equipment, and frequency of drills will depend entirely upon the size of the plant and the nature of its hazards.

"Smoky" Rogers Now a Mountaineer

That dangerous looking character is none other than Harry K. (Smoky) Rogers, Engineer, Western Actuarial Bureau, who was made a "Mountaineer" and presented with a complete mountaineer's outfit at the tenth anniversary of the fire school in Morgantown, W. Va. The presentation was made by G. R. Spindler, Director of Fire Service Extension, West Virginia University.

Cooperation with local fire departments should be encouraged, and the members should be invited to inspect the plant from time to time in order to familiarize themselves with the premises and the dangers that might exist in a fire.

Fire Alarms

Plants should be equipped with a fire alarm system and all employees instructed in its use. Suitable arrangements should be provided for calling the nearest municipal fire department.

Large chemical plants should have at least one or possibly two motor driven fire trucks, which besides the hose, various types of nozzles, foam solution, CO_2 gas and other fire fighting equipment should have for each man, gas masks, rubber coats, hats and boots.

Equipment for salvage work is dependent upon the nature of occupancy. Water proof covers, brooms and sawdust are very handy in preventing wetting of material not involved in the fire.

Extinguishment

When a fire occurs, the Chief will determine what is burning before ordering water turned on the fire, as otherwise dangerous explosions are liable to occur from certain burning chemicals.

Water in a chemical fire must be used very judiciously and should never be used where only a gas cylinder or two may do the work quicker, and with less mess or loss of material. Oftentimes, great values in chemicals might be lost by careless use of heavy hose streams on a a small fire.

Danger of Poisonous Gases

Poisonous vapors must be guarded against by the use of proper gas masks. No one except trained fire fighters or plant chemists should be allowed to approach during a fire.

Surrounding areas must be carefully watched and protected by hose streams if necessary to prevent the fire spreading.

After the fire, full protection such as sprinklers, fire extinguishers, etc., should be restored to their proper places as quickly as possible, and a report of the fire made immediately to the insurance carrier so as to avoid delay in resuming operations.

While there is much to be said about fire prevention and fire fighting in chemical plants, I have tried to touch briefly on some of the more important features.

MAINE FIRE CHIEFS WARNED BETTER DEFENSE IS NEEDED

New By-Laws Adopted at Annual Meeting Held at York Village—Chief Turner, Springvale, New President

By J. W. Randlette
Chief of Fire Department, Richmond, Me.

OVERCAST skies and a threat of rain did not curb the attendance at the annual meeting of the State Association of Fire Chiefs of Maine at York Village Tuesday, October 8. The meeting was called to order by the President, William H. Clifford 3rd, Chief of Cape Elizabeth, at 11 a.m., in the Town Hall, a short distance from the central station. More than 100 members and associates and guests were present when the meeting opened, with several guests present from New Hampshire and Massachusetts.

After formal opening of the meeting, the President introduced Nathaniel G. Marshall, the Chairman of the Board of Selectmen of the Town of York, who in well chosen words, as a representative of the oldest municipal corporation in the United States, extended a hearty welcome to the members of the association. Response to the address of welcome was made by Chief Allen F. Payson of Camden.

History of Local Department

Chief Ray Sturtevant, York Village Department, gave a history of the York Fire Department. In his remarks, he stated that the town of York was the oldest municipal organization in the United States, having been granted a charter as the City of Georgiana in 1650 by the King of England, and the location was known as the Province of Maine. Little was known of the early history of the fire department in the days of the bucket brigades but the present organization dated from 1916 after the very severe fire loss of the Marshall House.

The town of York has two separate fire departments at the present time, one located at York Beach, the other at York Village. The York Village Department after various home-made motor equipment has now standard equipment, consisting of American-LaFrance and Seagrave pumping engines and a city service ladder truck with Reo tractor. With the improvement of the fire department equipment, and the large improvement made in the water system, York Village enjoys an insurance rating of Class C, one of the few communities in Maine that has such a rating. The speaker explained that for the business end of the fire department, it was more of a social organization, answering any calls for any class of service to the community. It is an incorporated charitable organization, and for a long time the organization sponsored a moving picture theatre in the community, not for the financial benefit, but that clean, wholesome pictures might be controlled in the community. This was only one of the many community activities entered into by this organization, and for fire purposes, it has a standard organization of a Chief and Assistant Chiefs and company organizations.

Percy C. Charnock, Engineer, New England Insurance Rating Bureau, gave an informal talk to the members of the association along the line of preparedness, and cited the fact that in all of New England, there was not a single community that had equipment to meet the demands that might be made upon it in case of invasion from the air, that a great deal of thought was being given the preparedness program by the insurance interests, and engineers are assigned to the program who are in touch with the national program.

New By-Laws Approved

The business session of the meeting was the next order of business, and under unfinished business, Chief Oliver T. Sanborn, Portland, representing the Board of Directors, made a report for that board on a revision of the By-Laws of the Association, as voted at the Springvale meeting of October, 1939.

After reading the proposed by-laws, it was voted that they be adopted as read. The original name of the association was retained, viz, "The State Association of Fire Chiefs of Maine."

By the new by-laws, the active membership will consist of "any Chief of a fire department, Chief Engineer, Assistant Chief, Fire Commissioner, Fire Ward and Fire Wardens or their predecessors, of any town or city in the state. Associate members shall be elected to the association on recommendation of the Board of Directors. The applicant's qualifications shall be stated by the member presenting the application. Honorary members shall be those who may have rendered conspicuous service to The State Association of Fire Chiefs of Maine. Any active member may become a Life Member by a vote of the association and not be subject to the annual dues. Both associate and honorary members shall have all the privileges of Active Members except the right to vote."

Following the adoption of the new by-laws, it was voted that the new by-laws be printed and each member furnished with a copy and that a form of application be printed for future use.

New Officers

Chief Stanley G. Turner, Springvale, in the town of Sanford, was elected President; Chief Soloman Herman of the S. D. Warren Company, Westbrooke, Vice-President; Charles W. Bowker, Ex-Chief, South Paris, and for more than twenty-five years Secretary of the Association, was re-elected to the

(*Continued on page 627*)

Radio Proves an Indispensable Department Asset

EVERY year, in increasing numbers, Fire Departments throughout the country are awakening to the advantages that are available in routing and dispatching trucks on various duties, through the use of the radio. As a result, an ever increasing number of the departments are installing either one-way or two-way sets on the apparatus. In order to determine the extent of the installation of radios by the various departments, a survey was made by FIRE ENGINEERING among a representative group of Fire Departments. In the pages following are outlined the various opinions on the use of the radio of those reporting. Therein may be found many useful suggestions for increasing the efficiency of the department.

Schenectady, N. Y.

J. J. Higgins, Chief

We took our problem of providing communication for our three officers' cars and the rescue squad car to the radio engineers of the General Electric Company. They assisted us in laying out a two-way communication system, whereby we could talk from any of our radio cars to any other car in the fire or police departments. With this system, telephone calls can be made directly to and from the cars through telephones in any of our stations, in fact, through any telephone on the Bell System.

Arrangements were made whereby we could use a portion of the radio transmitter as a public address system to give orders to firemen in action during fire or rescue operations. This same system can also be used to receive orders from headquarters, even though firemen might be several hundred feet away from the car.

The equipment furnished by the General Electric Company consists of fifteen-watt ultra-frequency mobile transmitters and crystal controlled receivers. Weatherproof, marine type loud speakers are used.

Because of the emergency nature of our operations, we wanted to be sure we were getting reliable equipment, built by a reliable manufacturer. We are very well satisfied with our General Electric equipment.

Jacksonville, Fla.

W. Q. Dowling, Chief

We have five cars in our department equipped with two-way radios; two of these cars being connected with the signal bureau. There are two cars equipped with one-way radios. We have one fireboat equipped with a two-way radio. We have found these radios very beneficial in several ways. I am able to talk to the District Chiefs while they are enroute or returning from a fire, or while I am on tours of duty outside of quarters. The Chiefs' aides do not have to go to the fire alarm box to call for help, but they can talk directly with fire alarm headquarters and tell him exactly what they want. It is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. At the signal bureau, which handles both fire and police calls, there is a qualified operator on duty twenty-four hours a day. We use sets built by the department.

Highland Park, Mich.

C. F. Baker, Chief

We have one-way radios at the present, however, the Chief's car is to be equipped with a new two-way set. Inasmuch as police cruisers always respond to the scene of the fire, we have found this service very useful in keeping touch with the central office in the event of another fire. Also, it is a fast means of communication in getting the second alarm apparatus to a fire. When the Chief takes his car on inspection duty, he is always in touch with his office. I believe that the radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified radio operator on hand at the Police Headquarters twenty-four hours a day. We use a Sparton radio.

Newark, N. J.

Peter Kiernan, Chief

We have ten Chiefs' cars and one fire boat equipped with one-way sets. We have found these sets beneficial for they afford a medium of immediate contact with each other. This eliminates delay in "covering up" and keeps them constantly in touch with conditions in the event of a large fire in any section of the city. I believe that it is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Western Electric equipment.

Davenport, Ia.

R. A. Kelley, Chief

In our department, the Chief's car is equipped with a one-way radio. Police cars are all equipped with two-way radios. One of these cars attends every alarm so that there is a two-way radio available if necessary. We have found the radio beneficial in receiving additional alarms, making corrections, and in transmitting any other information to the Chief when he is away from the fire station. I believe the radio to be indispensable and a very efficient piece of fire fighting equipment.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use a set manufactured by Collins Company.

Jackson, Mich.

E. C. Daunter, Chief

Two cars, the Chief's car and the Assistant Chief's car, are equipped with two-way radio sets. I have found the radio beneficial for I am able to keep in touch with Headquarters and the Fire Alarm bureau; it has saved considerable time in turning in second and third alarms; and also, while at one fire, I am able to receive at once any other alarm that might come in. I sincerely believe that the radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at headquarters twenty-four hours a day. Our receiving sets are made by the Kar Radio Company and our transmitters are composite sets made by the local Police Department in their radio division.

Utica, N. Y.

J. N. Sullivan, Commissioner of Public Safety

Three cars are equipped with one-way radios. We have found them beneficial in keeping the chief officers in touch with the department activities at all times. I wouldn't say that the radio was indispensable; however, it is an asset with great possibilities.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Philco receivers.

Baton Rouge, La.

R. A. Bogan, Chief

We have two cars equipped with one-way radios. Through the use of these sets the Chief is able to keep in constant touch with the department. I believe that the radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. The transmitter is a 250-watt Westinghouse.

Portland, Ore.

C. C. Ralph, Superintendent of Alarm Division

We use both one and two-way sets. These radios keep the apparatus in touch with the operator so that it is in service going and returning. We use the radio in actual fire fighting to give and receive orders. I believe that the radio is an indispensable asset to efficient fire fighting. Our radio is not operated in connection with the police radio. There is a qualified operator on hand at headquarters twenty-four hours a day. We have built all our own equipment except the receivers.

(To be concluded)

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

PURCHASE OF FIRE APPARATUS FOR VOLUNTEER DEPARTMENTS

A VOLUNTEER fire department is a most peculiar organization. Primarily, it is a club, the same as any other social or fraternal order. It also incorporates the scope of a hobby group similar to the hundreds of stamp or camera clubs that function throughout the country. Like the hobby clubs, the members devote considerable time to study that they may become proficient in the chosen art.

But unlike a social club, or a hobby club, with a volunteer fire department, it is the public that reaps the benefits.

As the volunteer department grows, as the members become proficient in the art of fighting and preventing fires, as equipment is provided for the use of the fire companies, so does the public benefit in less fires and smaller size ones.

Unfortunately, however, while the community expects to benefit from the work of the volunteer departments, and looks to them for help in case of trouble, the community does not provide such departments with the needed apparatus. There are many municipalities that do buy apparatus for the volunteers, but this practice is far from general.

The men often must provide their apparatus, and must plan community functions to finance such purchases. Or the municipality purchases the apparatus, but requires that the men provide their personal equipment such as boots and waterproof coat. It is rare, indeed, to find that all apparatus and equipment are provided.

This round table discussion is based on the problem of purchase of apparatus for volunteer departments. The problem in full appears in the box on this page. In the box on the following page is the question that will be treated in the next issue.

Discussion of the Question

C. H. Thrasher, Chief, Tuskegee, Ala.: The city does purchase our fire apparatus and all equipment. Our department is volunteeer. Each year during Fire Prevention Week, I put on a fire prevention campaign; to raise money for the expense, I put out a fire prevention poster. This poster is cardboard and is eighteen by twenty-four inches. In the center of this board, I have printed what to do, and what not to do, to prevent fires, how to get rid of all fire hazards, etc. Then I have spaces all around this center space for advertisements. All the merchants and business houses are willing to give three to five dollars for their ads. I have about 125 of these posters printed and I tack them up in all public places, dormitories, schools, public buildings and they remain there for the year. These posters are good advertisement for the people who purchase ads and also is good for fire prevention.

Another way to raise money is to let the fire department sponsor a show. A minstrel coming to the town must pay a license. Instead of their paying the license fee in our town, the money is given to the fire department.

Ernest G. Pryfalhr, Chief, Guttenberg, Ia.: The municipality purchases fire apparatus by a two mill tax. This method has been the most efficient here as it makes every property owner help pay for the equipment and in that way makes him more fire conscious.

We have a volunteer company of twenty-three members with a Chief and an Assistant Chief. Our equipment consists of a fire truck with two forty-gallon foamite tanks and about 1,800 feet of 2½-inch hose, ladders, gas masks, Indian pump gun and two spray nozzles. We do not have a pumper as our water pressure is 110 pounds per square inch, and this is sufficient to take care of any fire we could have. We also have two pumps which can supply 350 gallons per minute each to our city mains at any time.

In my opinion, the fire department in any town of our size can get the best results if they work with rather than against the city council and mayor, for they are the ones that have jurisdiction over the purchase of all equipment and supplies.

Up to a year ago, we had some difficulty on the part of the public in distinguishing the firemen from civilians. Every member now receives a badge and must wear it. This shows the public that he is qualified to enter a building or to give first aid.

Albert H. Moses, Chief, Jefferson, Ohio: The Jefferson Fire Department has two triple combination fire trucks and a rescue car. One truck was purchased by the village on a bond issue, and the other equipment was purchased by funds raised by members of the volunteer company.

The Jefferson Fire Department has been organized for about seventy-five years and has employed all of the usual methods of benefit shows, magazine subscriptions, direct solicitation and carnivals. We have recently inaugurated a plan of newspaper advertising which has brought in a larger return than any other plan adopted. Stock companies provide a "fire department rider clause" with their rural insurance, costing $1 for three years. By the terms of this "rider" the insurance company contracts to pay up to $100 for the services of any fire company responding to a fire on the insured premises.

In our newspaper publicity, we called attention to the fact that residents of surrounding communities who called upon the Jefferson Fire Department for protection should not expect to receive the service free of charge in as much as they have contributed nothing to its purchase and maintenance. We also point out that all funds raised are used to purchase new equipment and to maintain the department. The response of the property owners in the surrounding townships has been very gratifying and in about seventy per cent of our out-of-town runs we are reimbursed by the insurance company.

The amount of our charge for our services is dependent upon whether or not the property is situated in a township which pays us an annual fee to insure fire protection. We recently purchased a portable pump to be used at rural fires to pump the water from inaccessible ponds or wells to the fire truck, which carries a 400-gallon booster tank. We use 1½-inch and ¾-inch lines for country fires.

W. Ewart Day, Chief, Winslow, Ariz.: The City of Winslow purchases all new equipment and maintains the department, including salaries of engineers and chief in its regular budget. Salaries of hosemen are paid into the

HERE IS THE PROBLEM

Does the municipality purchase fire apparatus for your volunteer department?

If not, how are funds raised by the department for apparatus purchase?

What method of money raising have you found most effective?

fire department treasury in a lump sum, and distributed by our secretary.

Any and all activities in which the fire department takes part, such as Chamber of Commerce membership, banquets, donations to charity, etc., are paid out of funds raised at an annual ball. We call it a Police-Fireman's Ball and pay the police fifty per cent commission on all the tickets they sell, paying all costs ourselves and taking all profits. Police officers then have some money to buy personal equipment, uniforms, etc.

E. W. Mattison, First Assistant Chief, Arlington, Vt.: The Town of Arlington pays for our fire apparatus out of the poll tax collected.

Such equipment as raincoats, hats, boots, first aid and other necessities are purchased from funds realized from two lawn parties sponsored yearly by the firemen.

John Hilderbrand, Chief, Ogallala, Neb.: The municipality here does buy the greater share of our equipment.

However, we do help ourselves a good deal. We sponsor an annual dance, a carnival each summer, and an occasional athletic show (boxing or wrestling).

We find that the carnivals, which we sponsor on a guarantee basis, bring us in the best returns. The dance does well, but, of course, there is more expense involved.

J. P. Fritch, Chief, Rochelle, Ga.: The city makes all purchase of fire hose for our department. The fire department is a volunteer company and we have been sponsoring an annual fair to raise money for our Buffalo fire truck which we purchased three years ago. We have found that the community fair sponsored by the fire department is a very good way to raise funds.

Charles Sweeney, Chief, Antioch, Cal.: Although strictly a volunteer department, the city has purchased all equipment and paid for it from the General Fund.

The volunteers gave an annual dance and from the funds raised gave the city the sum of $1,000 for a service truck, and the city paid the balance, as well as purchased a new combination and all hose and equipment necessary.

The department is now part full-time and part volunteer. We continue to give the annual dance and use the money raised for our own purposes. This makes but one drive a year and relieves the members of continually asking support of the department. We feel the city gets free service in a great many respects and should assume the financial burden of protection given by the fire department.

J. A. Richards, Chief, Artesia, N. M.: We have purchased a 600-gallon Seagrave pumper on deferred payment basis. We get a maximum of $2,000 as refunds from insurance in the State. This is prorated to the department. The city sets this up in its general fund and it is paid out that way to the fire department.

For our lesser expenditures, we raise money by giving some kind of a special dance.

J. C. Boyd, Chief, Wallace Ida.; C. D. Lawson, Chief, Aledo, Ill.; E. R. Caldwell, Chief, Warrior, Ala., and J. H. Hammitt, Chief, Saint John, Kan., report that their municipalities purchase fire apparatus for the fire departments in them.

K. S. MacKinnon, Chief, Amboy, Ill.: Our city buys the fire equipment for our department by appropriations. A committee of three aldermen serve as a fire and water committee, and purchases are made by them. The Fire Chief is very frequently called upon to help in making decisions.

This department usually sponsors a dance each year as a means of raising money for items of less importance. The past two years streets carnivals have been held and have been very successful.

J. F. Schluter, Chief, Summit, Miss.: The city has always given us everything we have asked for.

A. L. Martin, Chief, Amherst, N. H.: An article is put in the town warrant when new apparatus is needed. At the March gathering of the town meeting, this article is voted upon by the voters.

A. M. Jones, Chief, Reliance Fire Co., Woodstown, N. J.: Our Borough Council buys all of our equipment and supplies from taxes.

P. J. Soggin, Chief, Arcola, Ill.: The city of Arcola backs the fire department when it needs extra money for equipment and apparatus.

Russell McCoy, Chief, Elvins, Mo.: The municipality purchases fire apparatus through the St. Joseph Lead Company. We find entertainments of different kinds are the best means of money raising.

H. J. Rosentihl, Chief, Union Springs, Ala.: The purchase of apparatus and equipment for the fire department is taken care of from the General Fund of the city.

* * *

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Are chains provided on your hydrants to prevent the loss of outlet caps?

If so, have you found them effective?

In what ways, if any, do they interfere with the use of the hydrants by the Fire Department?

If cap chains are not employed, have you had many caps lost?

Answers to Previous Questions

The following replies are in answer to a previous question on fires spreading through air conditioning systems:

Robert Jones, Chief, Chattanooga, Tenn.: This Department has been very lucky in this respect in that fires occurring in buildings with air conditioning systems have been extinguished before making any material headway.

The rules and regulations governing installation of such systems here in the city are to be found in the building code of the city of Chattanooga in cooperation with the recommendations of the National Board of Underwriters.

The following are some of the rules and regulations governing the installation of air conditioning systems as included in the Building Code: Ducts; construction, thickness, fire resistive linings, tight connections, clearance requirements, passage of ducts through fire walls, arrangement of fire doors and dampers; outside air-intakes, re-circulation of air from certain spaces prohibited, low air inlet and outlet openings to be protected, location of fans and air handling equipment, manual and automatic controls and the installation of electric wiring and equipment for air conditioning systems.

L. B. Barnum, Chief, Phoenix, Ariz.: We have had fires in air conditioning systems of buildings. The fires involved hotels, office buildings and restaurants. However, since air conditioning is so universal in Phoenix, practically all types of structures may become involved.

Our regulations governing installation of such systems include dampers with fuse links and inspection plate holes in the ducts on each floor. Then when a fire starts, it is cut off at the first damper and the inspection plate may be removed to give room to operate a hose line without damaging the duct by chopping holes in it. The damper and inspection plate are located together.

L. M. Funk, Chief, Dallas, Tex.: We had a fire on January 31, 1940, in the municipal radio station broadcasting building, a fire which spread rapidly and caused a rather large loss through the air conditioning system ducts. The building was brick and wood, and was lined inside with sheet rock.

Our building code was formulated so many years ago that it only has the most elementary requirements. At the present time, we are working on an amendment which will bring the code up to date as regards air conditioning systems.

Fortunately, we have not suffered from fires of this type, outside of the fire mentioned above, but with increasing use of this sort of system, we realize that steps must be taken to see that they are installed safely from the standpoint of fire spread, and we hope that the amendment which we are offering will obtain proper recognition.

Herman E. Gutheim, Chief, Cambridge, Mass.: We have had no fires in any building where an air conditioning system has been installed.

At present a committee is at work on a new building code and zoning laws, and no doubt air conditioning will be regulated under the new code.

Howard Travers, Chief, Baltimore, Md.: We have not had any major fires from this cause. Our regulations provide that ducts shall be constructed entirely of non-combustible materials; must have fire resistive linings, and equipped with automatic fire dampers.

M. J. Brun, Chief, Fort Smith, Ark.: We have not had any fires that extended through air conditioning systems.

All air conditioning systems are put in according to the specifications of the National Board of Fire Underwriters.

Edward A. McHugh, Chief, Louisville, Ky.: A fire started in a duct system at an opening on the first floor and traveled upward five stories through the system. It ignited a combustible frame on the fan house located on the roof.

The damage was slight to the duct system. Paint was scorched and fan damaged.

This system is merely a dust exhaust system installed to change the air in the section of the building occupied as a kitchen.

O. F. Romann, Chief, Cleveland Heights, Ohio: Our regulations require that installations shall be by approved methods acceptable to the Department of Buildings. Before a permit was granted for a recent installation in a motion picture theatre, the standards of the National Board of Fire Underwriters were consulted and their recommendations followed as closely as possible. The Bureau of Fire Prevention is consulted by the Building Department on all such installations and both departments cooperate fully in seeking to reduce fire hazards.

Francis W. Donnelly, Chief, Lincoln, Neb.: We do not have any regulations covering the installation of air conditioning systems. Our city officials have been asked to prepare safety regulations on air conditioning systems, but nothing has been done.

Leo J. Urbanski, Chief, Saint Joseph, Mo.: We have had fires involving air conditioning systems. One was in a brick and frame five and ten cent store, and the other in a brick and frame residence.

F. L. Campion, Chief, Fargo, N. D.: The installation of air conditioning systems in our city is governed by the Underwriters' specifications.

Hayden New Bridgeport Chief

Assistant Chief Martin J. Hayden, veteran member of the Bridgeport, Conn., Fire Department, with thirty-three years of service to that city, will be named Chief of Department early in January when the Board of Fire Commissioners will meet and will request the Civil Service Commission for certification of a Chief Engineer.

Assistant Chief Hayden rated highest in the recent examination for the post left vacant by the death on October 9 of Chief Thomas F. Burns. The eligibility list, according to law, must remain on the table for thirty days pending any possible appeal.

Hayden will become the seventh Chief since the City of Bridgeport adopted a permanent Fire Department. He was born in that city on November 26, 1882. After learning the core-making trade at the Wheeler & Wilson factory, he joined the Fire Department as a callman on May 13, 1907. On April 1, 1908, he was appointed a permanent man and attached to Engine 4 as substitute driver.

On May 17, 1916, he was promoted to a Lieutenant. With the adoption of the two-platoon system in Bridgeport on April 1, 1918, he was advanced to a Captain. On July 15, 1920, Hayden was again promoted to Assistant Chief in charge of the East Side District and served in that capacity for twenty years. During the time Chief Hayden has served as a firefighter, he has covered some of the biggest fires in the city.

THOMAS F. MAGNER.

A Comedy Touch Was Added at the Convention by Making Laurel and Hardy, the Film Comedy Team, Chiefs for the Duration of the Convention. Chief Olsen Is in the Center

Omaha Host to Convention

Chief Arthur W. Olsen and the Omaha, Neb., Fire Department were hosts to the 59th Annual Convention of the Nebraska State Volunteer Firemen's Association in October. Nearly 2,000 delegates attended the convention.

Chief Russell Salak, Schuyler, was elected President; Chief Sol Willis, Sidney, First Vice-President; H. G. Mattson, Kearney, Second Vice-President; and Louis Novak, Norfolk, Secretary.

Chief Arthur Bendler of Holdrege, the retiring President, and Chief Olsen agreed that the convention reached the high point, that the officers have been striving for.

This was the first convention held since the start of the State Vocational Training Program for firemen. Chief Olsen, as a member of the Educational Committee of the International Association of Fire Chiefs has been very active in getting the program started. The State Department of Vocational Education is doing a fine job and the Instructor, Mr. J. I. Fetters is going over 100 per cent.

T. A. Fleming, Director of Conservation, National Board of Fire Underwriters, addressed the group, thoroughly covering the modern hazards that fire departments are up against. Mr. C. W. Stein, Special Agent for the Federal Bureau of Investigation made a timely talk on "Sabotage." Governor R. L. Cochran, long-time friend of the volunteer firemen, made the opening speech of the second day of the convention.

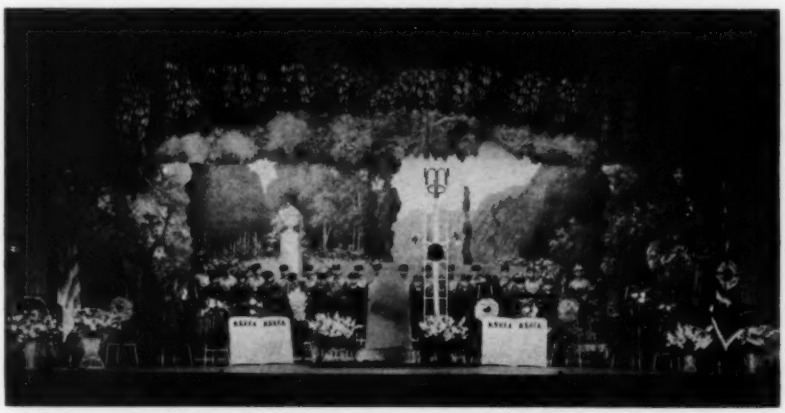
The memorial services at the Orpheum Theatre, under the direction of Chief Olsen, was probably the outstanding event of the convention. The delegates were unanimous in their opinion that this was the best memorial service they have ever witnessed.

Norfolk, Neb., won the 1941 meeting.

CHIEF A. W. OLSEN,
Omaha Fire Department.

Trucks to Carry Hand Pumps

The New York Fire Department is equipping the Hook and Ladder Companies with two Indian Hand Pumps each. The department finds that the pumps will do as effective a job as soda and acid hand extinguishers.



The Stage Set-Up at the Memorial Services at the Orpheum Theatre

Conn. Chiefs' Club Meets

The Connecticut Fire Chiefs' Club held its quarterly meeting at the Hotel Elton, Waterbury, Conn., Saturday, November 16, 1940. Chief Tom Cavanaugh, Waterbury, greeted the fifty Connecticut Chiefs who attended. President John Pachl, Chief of New Haven Annex, presided.

At the meeting it was announced that a donor, who requested his name be withheld, had offered the State Department of Education a motor pumper for use in their firemen's training school. The Chiefs present recommended the gift be accepted and also assured the Supervisor of Education, H. S. Hall, that they were in favor of a Fire College, particularly as Trinity and other local colleges had offered the use of their facilities for the purpose. Chief Tom Donnelly of West Hartford offered to store the apparatus.

Other subjects discussed included firemen subject to the draft, and plans are now being formulated, in cooperation with Commissioner Hickey of the State Police, for national defense.

A spirited discussion, led by Chief Potter of Greenwich, Conn., led to much interesting information being divulged about the progress of hose standardization throughout the State. Consideration was given the need for standardizing suction threads, although there seemed to be considerable doubt as to the absolute necessity for this effort. Bridgeport and one or two other cities in its vicinity are now investigating the advantages of standardization, and the advantages to be gained from mutual aid which they may need at some time.

Fireworks, firemen's pensions, liability, and other matters were referred to appropriate committees. Apparently, the International and the New England Chiefs' Associations' affairs are interesting the Connecticut Fire Chiefs, and the Boston convention promises to be a lively meeting.

Among the chiefs attending the meeting in Waterbury were Chief Keena of Hartford, Chief Riel of New Haven, Chief Moroney of Meriden, Chief Pitney of Newington, Chief Stow of Milford, Chief Twining of Blue Hills, Chief Woolridge of Glastonbury, Chief Cromack of Unionville, Chief Henderson of Thomaston, Chief Griffen of Norfolk, Chief Swan of Seymour, Chief Mercer of Woodbridge, and Chief McNamara of Danbury.

JOHN ASHMEAD

Program of Industrial Protection Started

In a recent letter to the Associated Business Papers, Inc., J. Edgar Hoover, Director of the Federal Bureau of Investigation, announced the inauguration of a program to survey the protective facilities of manufacturing establishments having government contracts to fulfill. The purpose of this program is to prevent sabotage and espionage acts.

In line with this plant survey program, and to assist industrial concerns and municipalities in establishing effective protection against possibilities of acts of espionage and sabotage, the FBI prepared a comprehensive booklet entitled "Suggestions for Protection of Industrial Facilities." Because of its confidential nature, this booklet is limited in distribution.

ELABORATE PREVENTION PROGRAM CARRIED OUT BY ABILENE, TEXAS

Each School Appoints or Elects a Student to Serve as Chief—All Firemen Assisted in Public Work

By Chief J. R. Roe
Abilene, Tex., Fire Department

FIRE Prevention Week this year for the Abilene, Tex., Fire Department required real effort and work by each member of the department. The men were on duty twenty-four hours a day with no time off during the entire week. They had to receive hundreds of visitors at the fire prevention booth which was erected at the West Texas Fair. The fire station and first aid station were manned by members of the department. They had to be on the alert for any fire hazards. The regular quota of firemen were on duty at all times at the fire stations. Business and industrial inspections were conducted with renewed vigor, and the seventh residential inspection campaign was launched.

Seventh Annual Inspection

In the booth were displayed many of the pieces of equipment that a fireman can successfully utilize in fighting fires. During the week, a poster contest was sponsored by the Boosters Club in Abilene. Many of the posters received in this contest formed the background of the booth, along with photographs of old Abilene fire equipment, and certificates received by the city of Abilene for its national rating in fire prevention and control.

Among the pieces of fire fighting equipment that were displayed in the booth were an inhalator, a portable acetylene cutting unit, a telephone mask communication unit, a hydrogen-sulfide detector, a carbon-monoxide detector, a detector for determining the concentration of carbon-monoxide in the blood, an explosion meter for detecting and locating explosive mixtures in a building, and a fire alarm unit. This latter unit was used to educate the people in the use of the fire alarm box.

A demonstration was given to show what happens when the box is pulled and how the firemen know which box has been pulled. This demonstration was given to over 75,000 school children in the county.

Equipment Displayed

Every year at each school, the students elect, or the principal appoints a Chief and an Assistant Chief for the ensuing school term. These young Chiefs form what is known as the Fire Chief's Club. The schools are inspected twice each month by members of the Fire Department and on each of their inspection tours, the inspector is accompanied by the Chief and the Assistant Chief of the school involved. These two school officers are required to affix teir signatures to the inspection report which is filed at fire headquarters, and a duplicate is forwarded to the local board for its use.

These young Chiefs also assisted in the fire drills and in putting up the Fire Prevention Week posters. The members of the Fire Chiefs' Club received their first instruction in first aid this year. The boys were given a complete course of training in first aid and safety by the members of the Abilene Fire Department.

Student Officers Appointed

This year marked the launching of the seventh annual home inspection campaign conducted by the department in addition to the regular business and industrial inspections. Last year, a complete card file was made of every dwelling and business establishment within the corporate limits of Abilene. These cards, kept on file at fire headquarters, were used again this year on the recheck.

One of the high school students gave a radio talk during the week urging the prevention of a fire blitzkrieg against property. Another high spot on the program was the participation of the Abilene Fire Department equipment in the Fire Prevention parade, which was held in connection with the West Texas Fair parade.

Ex-Chief Gunn, Toronto, Dies

Alec Gunn, former Platoon Chief who served with the city of Toronto, Ont., Fire Department for forty-eight years, passed away at his home in Toronto, at the age of seventy-one. He had been retired about a year ago, and in ill health for some time.

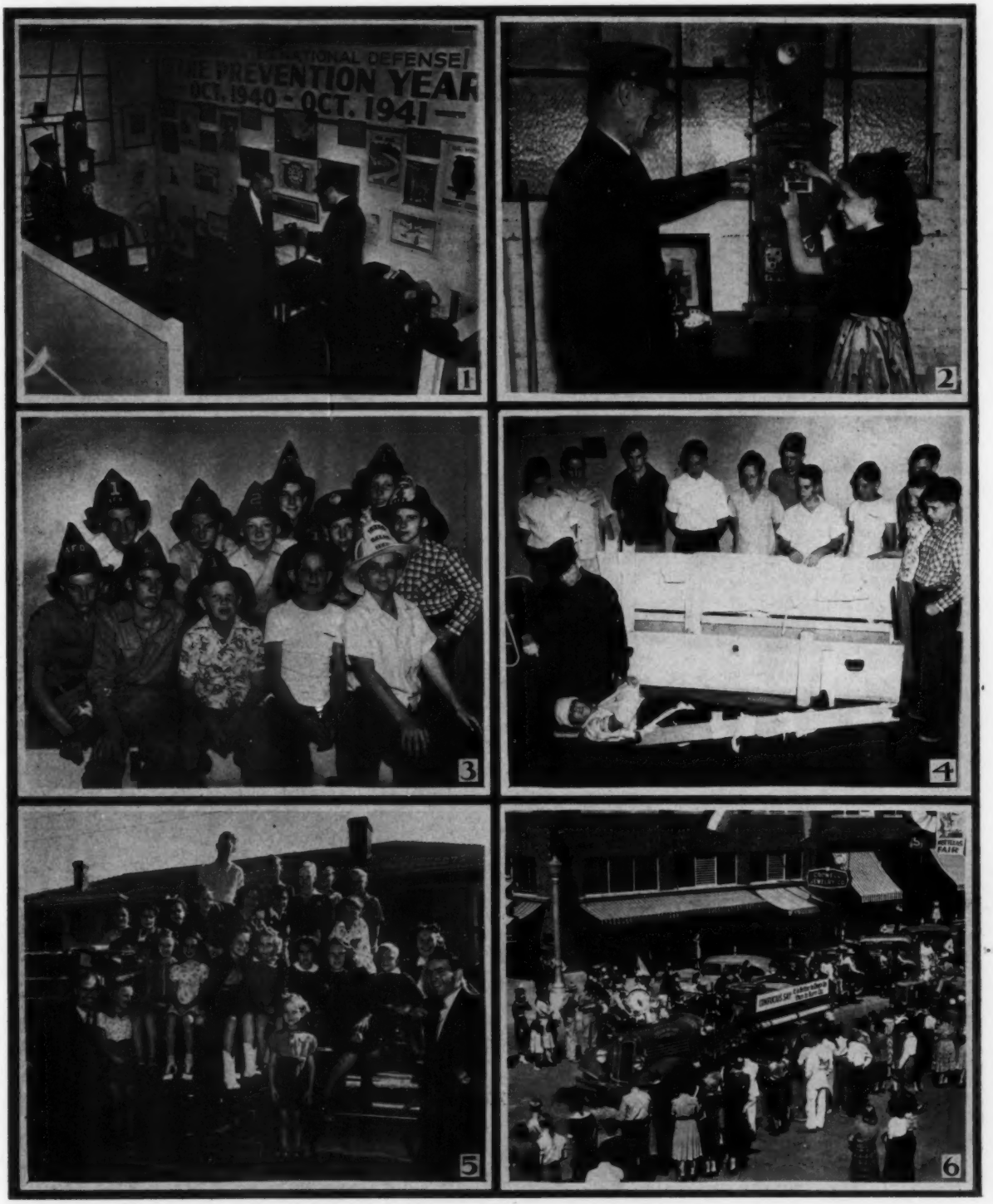
Chief George Sinclair stated that he was one of the most efficient officers in the department.

The late Chief Gunn started out as a driver in 1888 driving a one-horse reel for a contractor, who had the contract for fire protection at that time. Nine months later he was driver for No. 1 Aerial located at Lombard Street. In 1905 he was promoted to Captain, 1914 to District Chief at Yorkvill, and in 1930 to Platoon Chief. This post he held until his retirement.

Chief Gunn was widely known among the Ontario firemen and he was always at the various firemen's tournaments. His last work was to make a report on the fire fighting needs of the surburban districts of Toronto.

He was a member of St. John's Presbyterian Church and also an elder. He is survived by two sons and two daughters.

JOHN KARL LEE.



Pictures Taken During Abilene, Texas, Observance of Fire Prevention Week

1. Mayor W. W. Hair inspects the Fire Prevention Booth at the West Texas Fair. 2. A young lady receives instructions on how to report a fire, using a fire alarm box. 3. The Fire Chief's Club composed of Chiefs and their Assistants who were elected in the various public schools for the coming year. 4. Members of the Fire Chief's Club receive their first instructions in first aid. 5. Group of young school children experience the thrill of having their picture taken on one of Abilene's fire trucks. 6. One of the pieces of apparatus participating in the Fire Prevention Parade.

PANIC IN NEGRO CHURCH FIRE AVERTED BY QUIP OF HUMOR

Church Jammed with More than 4,000 Persons—Four Alarms and Special Calls Sent for Apparatus

By Bob Greenock

ALERTNESS of firemen, fire alarm operators and police, plus a lucky break, prevented a holocaust when fire broke out in the crowded Olivet Baptist church, 3101 South Parkway, Chicago, the day after election.

More than 4,000 of the 12,000 Negroes who make up the congregation, had either crowded into the historic gray stone building, or were trying to get in to attend funeral services for their pastor, L. K. Williams, Negro religious leader who was killed in an air crash October 30 near Olivet, Mich., as he was flying to attend a Willkie rally.

Fire at Start of Service

Services were about to begin in the church that was once used as a station on the "underground railroad" through which escaped slaves fled to the North during the Civil War era, when someone in the congregation heard a crackling sound, looked up, and then leaped to his feet, shouting:

"The church is on fire!"

It was a critical moment. The aisles were filled with men, women and children. Exits were barred by hundreds who were trying to get in. If a panic started, hundreds might be burned, suffocated or trampled to death. But a strange quirk of humor prevented the panic. As Sergt. Thomas B. Chapman of the Chicago Park police, assigned to the funeral because South Parkway is a boulevard and under the jurisdiction of the Park Board, explained later:

"Because there were so many trying to get in, those already in thought that the shout was just a trick to empty the church so that the standees could get seats."

Policemen on Guard

Taking advantage of this fortunate circumstance, Sergt. Chapman, having seen wisps of smoke, hastily, but without betraying excitement, posted a dozen policemen at strategic points. Several persons outside, seeing the flames and smoke issuing from the second floor Sunday School rooms and from the roof, rushed to telephones in stores across the street.

When several calls reached the fire alarm office simultaneously, Chief Alarm Operator John Gegan immediately ordered a box struck. Preparations were made for additional alarm response.

Meanwhile, most of the mourners remained in their seats despite the announcements of the police that there was a fire and that everyone should walk out quietly. It was not until the first companies began to arrive with shrieking sirens and clanging bells that a rush for the door began. Despite efforts of police and early-arriving firemen, several persons were injured slightly as they scuffled at the doors, fighting their way out. Several others were cut by glass when they jumped through windows.

The still alarm was received at 10:21 a.m. The box was struck a minute later and at 10:25 a 2-11 was struck for box 177. This was on request of Chief Egan of the 10th Battalion. Upon receipt of the 2-11, William Killeen, senior fire alarm operator, ordered extra squad and truck companies to respond. At 10:30, Chief Anthony Seaman of the 4th Division ordered a 4-11, bringing in both third and fourth alarm companies. Fire Commissioner Michael Corrigan ordered a 5-11 sounded at 10:35. Upon receipt of the 4-11, Operator Killeen ordered a second water tower to the fire and, after the 5-11, dispatched three additional ambulances.

All Persons Led to Safety

Commissioner Corrigan ordered a special call for five engines at 10:37 and another for five more at 10:38. Meantime police cars, fire department ambulances and squads rushed the injured to nearby hospitals. Many persons were led out by firemen who formed human chains. Others were taken from the broken windows via short ladders.

Having evacuated all persons, the firemen turned their efforts to extinguishing the fire, and with the aid of the two water towers and turret streams, soon had it under control. The whole affair took little more than an hour.

Companies attending the blaze were: thirty-two engines, five trucks, four squads, four ambulances, three high pressure wagons, two water towers and one light wagon. First Deuty Fire Marshal Anthony Mullaney and several Battalion Chiefs also responded.

After the fire, several of the congregation reported that their late pastor had told them that if they did support President Roosevelt for re-election, "an all-consuming fire would engulf them." Some seemed to feel that the fire was retribution for their having not voted for Willkie.

Fire department officials, not superstitious, reported that the fire apparently started from a short in an amplifying system.

Mysterious Blast Rocks Factory

One man was killed and three others injured in a recent explosion in the acid plant of the Calco Chemical Division of the American Cyanamid Company, between Bound Brook and Somerville, N. J. The cause of the blast has not been determined.

Although the Calco Chemical Division manufactures many chemicals used in munitions and other war supplies, the explosion occurred in a building in which there was no government work being carried on. For that reason, it is not believed that the blast was an act of sabotage.

Flames Sweep Through Tar Plant

A four-alarm fire of undetermined origin broke out in the Reilly Tar and Chemical Corporation, Newark, N. J., recently, necessitating the calling out of twenty pieces of apparatus. The blaze

Firemen Fighting the Blaze at the Plant of the Reilly Tar and Chemical Company

was believed to have started in the naphthalene flaking room, where it was fed by highly inflammable quantities of naphthalene, causing it to spread rapidly to two other buildings.

Fire fighting efforts were concentrated on preventing the spread of the blaze to numerous tanks on the ground containing large quantities of tar oil. It took about two hours to bring the blaze under control.

Gasoline Fire Destroys Parked Cars

Between seventeen and twenty cars were either totally or partially destroyed by fire in Washington, D. C., as a result of a collision involving streetcar and a gasoline truck. The impact threw the truck clear of the street car against the curb where it overturned. The truck driver barely made his escape when the truck burst into flames. Flaming gasoline ran along the gutters setting fire to many parked automobiles. Two alarms were sounded when it seemed that the first apparatus would be unable to cope with the blaze. The twelve engine and hose companies responding to the alarms quickly brought the blaze under control.

Some of the parked cars were saved when police and spectators broke the car windows and pushed the cars to safety.

Upper, Photo Courtesy of Jerome Gray

Two Views of the Gasoline Fire Which Destroyed Many Cars in Washington

Upper: The flaming liquid is shown traveling along the gutter. Lower: The cars which were destroyed or badly damaged are shown on the right. The overturned gasoline truck may be seen at the corner.

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of November, 1940. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending November 30	Loss in Thousands of Dollars
Beltsville, Md.—Radio station of the U. S. Bureau of Standards	50
Milan, Mich.—Buildings of the Ideal Furnace Co., destroyed	400
Lake City, Minn.—Gillett Eaton Foundry, damaged	65
Metuchen, N. J.—Warehouse of Celotex Corp., damaged	80
Culver City, Cal.—Metro-Goldwyn-Mayer studio and sets	80
Center, Tex.—Haslam Lumber Co., damaged	50
Cleveland, Ohio—Benedictine's High School, damaged	65
Chicago, Ill.—Olivet Baptist Church, destroyed	50
Braddock, Pa.—Polish Falcons Hall and nearby buildings, destroyed	400
Bridgeville, Pa.—American Cyanamid and Chemical Corp., damaged	200
Wilmerding, Pa.—Business establishments on Station Street, destroyed	65
Atlanta, Ga.—Georgia National Guard Armory and City Auditorium, damaged	200
Sycamore, Ga.—Sycamore Consolidated School, destroyed	50
Portland, Me.—McLellan Store, damaged	50
Butte, Mont.—Five buildings	80
Goose Creek, Tex.—Store destroyed	50
Arlington, Vt.—Memorial High School, destroyed	50
Newport, Ark.—Two large establishments destroyed, and several others damaged	100
Bucyrus, Ohio—Sulphur Springs Consolidated School, destroyed	80
Glen Cove, Me.—Two-story summer home destroyed	50
Detroit, Mich.—South unit of Oakland Mills Riding Stables, destroyed	50
Rosindale, Mass.—Bethany Methodist Church, destroyed	50
North Adams, Mass.—Hotel Wellington, damaged	70
Norwood, Mass.—Sheds and lumber of Norwood Lumber Co., destroyed	100
Clarksdale, Miss.—Cotton gin, seed, and bales of cotton, destroyed	50
Paris, Ark.—St. Scholastica Convent, destroyed	80
Schenectady, N. Y.—Kellan and Shaffer Co., damaged	50
Baker, Ore.—Ryder Bros. Packing Co., and adjoining bldgs., damaged	70
Bristol, R. I.—Mansion of William Gilman Low, destroyed	50
Grimsby, Ont.—Merritt Bros. basket factory	80
Charleston, Mo.—First Presbyterian Church, destroyed	50
Williamsburg, Pa.—Williamsburg grade school, destroyed	50
Joplin, Mo.—Crown Drug Co., damaged	50
Winnipeg, Man.—Monadnock, block, damaged	120
Seekonk, Mass.—Berry Farm barn, destroyed	50
Woodsfield, Ohio—Entire block on Main Street destroyed	50
Kinzua, Pa.—Two-story business building	65
Hitchcock, Tex.—Dwelling, destroyed	80
Newport, Ark.—Several business offices, destroyed	50
Auburn, Me.—Hotel Whitehall, destroyed	65
Russellville, Ark.—Junior High School building, destroyed	60
Worcester, Mass.—Four-story business building	165
Port Townsend, Wash.—Warehouse of the Puget Sound Navigation Co., destroyed	80
Sacramento, Cal.—Business building	50
New Bedford, Mass.—Allen Theatre block	80
Minneapolis, Minn.—Business building, destroyed	80
Big Bear City, Cal.—Business block, destroyed	50
Glasgow, Ky.—Business buildings, destroyed	200
Mankato, Minn.—Paper Service Co. Building, destroyed	50
Rochester, N. Y.—Six business buildings, destroyed	175
Montreal, Que.—Three story business building, damaged	80
Lafayette, Ind.—Montgomery Ward and Co. department store, damaged	200
West Lynn, Mass.—Apartment buildings and private home, destroyed	50
Lynn, Mass.—Apartment house, other dwellings, and stores	60
Garretsville, Ohio—Vanderslice Milling Co., destroyed	50

Chief F. A. Sullivan Honored

Chief F. A. Sullivan, who recently completed thirty-one years of service with the Lawrence, Mass., Fire Department, was honored at a banquet at which more than 600 friends, neighbors, and associates were in attendance. He was presented with a gold watch and chain, and a purse.

Chief Sullivan was appointed to the department in 1909, and during his thirty-one years, he served in the capacity of Lieutenant for twenty years until his appointment as Chief. Poor health forced his retirement.

Among the Fire Fans

By Otis Smith

PERSONS who have been corresponding direct with this writer will please note his new address. Address your letters to Otis Smith, 810 Cedarcroft Rd., Baltimore, Md. Baltimore fans may be interested in the usual fire fan statistics: Telephone, Tuxedo 4476; House box, 8636; nearest fire company, Engine 43.

Roi Woolley sort of "slipped up" in the last issue of his page, "The Watch Desk." That 15-alarm Baltimore blaze really was a 15-alarmer. The unique design of Baltimore assignment cars does away with the necessity of pulling special calls after the alarms on the card have been used. They simply go to the next box and start pulling alarms all over again. Every company in the department that does fill-ins, is listed on the card, and they fill-in automatically. Better luck next time, Roi!

This writer's change of address also involved a change in post office. This change occurred at exactly the wrong time, consequently a good many letters intended for this column will be received too late for use. All such mail will be held over for the January issue.

Ben Ellis of the Boston Fire Associates sent the following on the Boston Fire Department Band. Hugh Lynch of Rescue No. 3 has been elected President of the group. Other officers are: Vice-President Dennis Sullivan, Engine 7; Treasurer, John Galvin, Ladder 25; Secretary, Edward Feeley, Ladder 21. The Directors are: George Brady, Engine 50; Walter Kelley, Engine 4; James Kenney, Engine 46; Kerin Shaughnessy, Engine 20; Manual Souza, Engine 40.

John Abbott is the conductor of the band. James Shea of the Fire Prevention Division is librarian. President Lynch was appointed to the department several years ago, and was known as the 100 per cent fireman, as his physical examination gave him a mark of 99.46 The band consists of about fifty members and plays at all social and charitable functions, whenever possible.

Wm. Paul Babcock will continue as editor of "The Blanket." The paper is published by the Rockland County Emergency and First Aid Council, New York. It is of interest to all who wish information on first aid developments. Mr. Babcock's address is Nyack, N. Y.

Thanks to Howard Larcombe for that handful of pictures of Washington D.C. fire apparatus. Not to mention the several pix of Maryland volunteer outfits. Mr. Larcombe lives at 227 Laurel St., Silver Spring, Md. He is interested in trading photos.

When I mentioned something about a time sheet on that 15-alarmer Baltimore experienced a few months ago, I did not know what I was letting myself in for. Luckily, the editor came to my aid by publishing a copy of the sheet. The time sheet may be seen on page 568, November issue. About sixty requests were received for the sheet, but as I have run out of copies, the requests will have to mark time for the present.

Two photos from Bill Swartz of Ocean Grove, N. J., on the Vigilant Engine Co., No. 1, York, Pa. The photos are of their reserve wagon . . . thanks to Mr. Wilgus, also of Ocean Grove, for that pic of the ladder truck . . . thanks to "Scrappy" Patterson for the four photos of Pittsburgh fires.

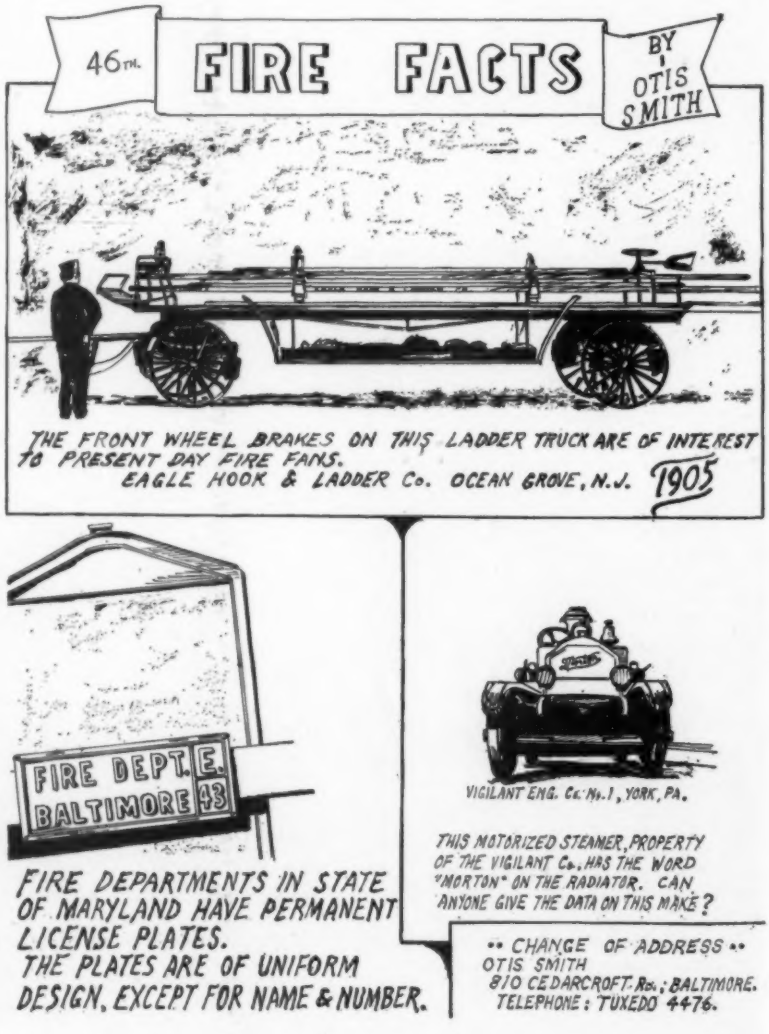
According to Ben Ellis, Rescue Co. 2 of Boston responded to 155 alarms in October. Engine 14 responded to 115 alarms during the same period. The responses were almost all on box alarms. We understand that Mr. Ellis is the only civilian who is an Honorary Member of the Boston Fire Department Band.

At a recent meeting of the San Francisco Phoenix Society, members watched a motion picture entitled "The Municipal Salvage Man" in which the work of the salvage corps or insurance patrols was illustrated.

Now that the Treasure Island Fair has closed, there have been reductions in fire equipment and personnel. On the island there still remains one full house consisting of one engine, one truck, one hose tender, and the fire boat. About one-third of the men have been returned to San Francisco.

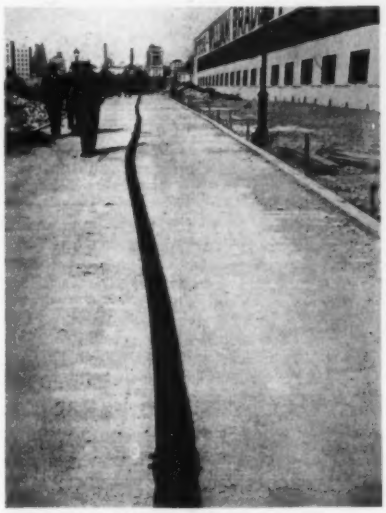
We understand that Edward Sprangers has been appointed to the Philadelphia Fire Department. Ed is a fire fan of long standing and should find the department of great interest. We had the pleasure of conversing with his cousin, Bill, of Engine 28 and found him to be a good buff also. The notice gave Ed's. assignment as Pipe Line No. 5, Fire Headquarters, Race and Broad Sts. A Pipe Line in Philadelphia corresponds to a High Pressure or Battery Wagon in other departments.

O. E. Bowman, 135 W. 56th St., New York City, is a buff who is interested primarily in the alarm and dispatch end of the fire game. He is interested in learning about the various systems in use. The watch desk activity when a box is "in" is fascinating to this writer also, who has passed up many a third alarm in order to be at a station and observe the movements of the apparatus in responding to alarms and changing their location.


46TH.
FIRE FACTS
BY OTIS SMITH
THE FRONT WHEEL BRAKES ON THIS LADDER TRUCK ARE OF INTEREST TO PRESENT DAY FIRE FANS.
EAGLE HOOK & LADDER Co. OCEAN GROVE, N.J. 1905
FIRE DEPT. E. BALTIMORE 43
FIRE DEPARTMENTS IN STATE OF MARYLAND HAVE PERMANENT LICENSE PLATES.
THE PLATES ARE OF UNIFORM DESIGN, EXCEPT FOR NAME & NUMBER.
VIGILANT ENG. Co. No. 1, YORK, PA.
THIS MOTORIZED STEAMER, PROPERTY OF THE VIGILANT Co., HAS THE WORD "MORTON" ON THE RADIATOR. CAN ANYONE GIVE THE DATA ON THIS MAKE?
•• CHANGE OF ADDRESS ••
OTIS SMITH
810 CEDARCROFT Rd.; BALTIMORE.
TELEPHONE: TUXEDO 4476.

Department Tests Long Distance Pumping

A test was conducted by the New York Fire Department to determine the dependence that can be placed on a fireboat for pumping water long distances, in the event that the city's water service



Part of the Hose Through Which the Fireboat John Purroy Mitchel Delivered Water in the Pumping Tests

is disrupted. The fireboat John Purroy Mitchel, built in 1921, pumped water through a mile of hose strung along the waterfront in Long Island City, N. Y. The pressure at the boat's pumps was about 250 pounds, and the water discharged through a 1¼-inch tip at a pressure of sixty-three pounds and at a rate of 366 gallons per minute. When the water was turned into the line it took 5½ minutes for it to travel from the boat to the nozzle.

In a second test, five pumpers were placed at intervals between the boat and a siamese discharging into two lines. The two lines discharged through two 1¼-inch tips each at a pressure of sixty-two psi.

Willow Grove "Second Alarmers" Formed

In March, 1938, a unit known as the Second Alarmers of Montgomery County was formed in Willow Grove, Pa., and chartered under the laws of the State of Pennsylvania relative to emergency squads. They took as their motto: "To be of service to those who are aiding others in time of distress."

All members of this organization are volunteers and are on call twenty-four hours a day. The organization has steadily grown until now it is operating two pieces of apparatus, namely the coffee wagon and the emergency wagon. This organization responds for calls anywhere within a radius of 100 miles of Willow Grove.

In October 1938, they made a run of eighty-eight miles to Linden, N. J., where they rendered help in the way of food and drink to over 400 fire fighters. On July 30, 1940, they responded to a Camden, N. J., fire, serving coffee to members of the fire companies on the scene.

The first aid squad treated over 160 cases. All members are qualified in the American Red Cross Course in First Aid. This organization is supported by voluntary contributions from small townships within Montgomery County, Pa.

The Second Alarmers Working at the Camden, N. J., Fire

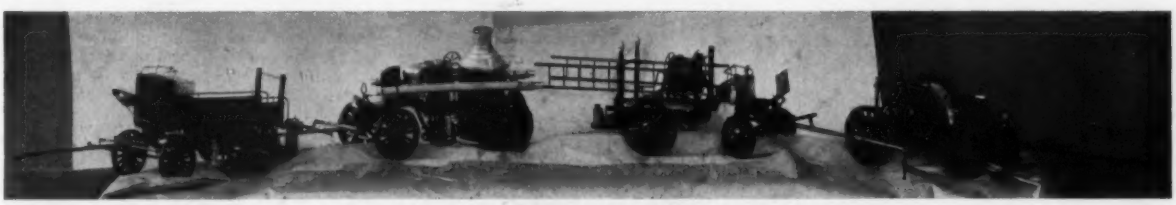
New Jersey Holds Training Course

A course in Firemanic Training is being conducted at Rutgers University at New Brunswick, N. J. Officers from throughout the state attend the lectures and sit in on the round table discussion that follows each lecture. Instructors of a wide range of experience have been engaged. Retired Battalion Chief J. J. Deasy of the New York Fire Department will lecture on size-up, tactics and strategy essential at fires in dwellings, stores, barns, factories and similar occupancies. Chief Charles F. McGinley of East Orange is the Educational Director of the fire course.

Chief Noll Cites Defense Needs

Chief Chris W. Noll of the Poughkeepsie, N. Y., Fire Department made a determined appeal to the Poughkeepsie Defense Council for assistance in the development of his department to meet national emergency requirements. Having had his requests for a substantial sum of money for departmental improvements turned down in a city administration budget making session, Chief Noll plans to put his personnel and equipment through a series of comprehensive tests and demonstrations to determine just what they can do. He pointed out that his department is about 6,000 feet short of hose.

Chief Noll advised the council that possible emergency water supplies should be set up in the event that the regular city supply went out of service. He suggested widening streams in the city or the vicinity to create emergency reservoirs.

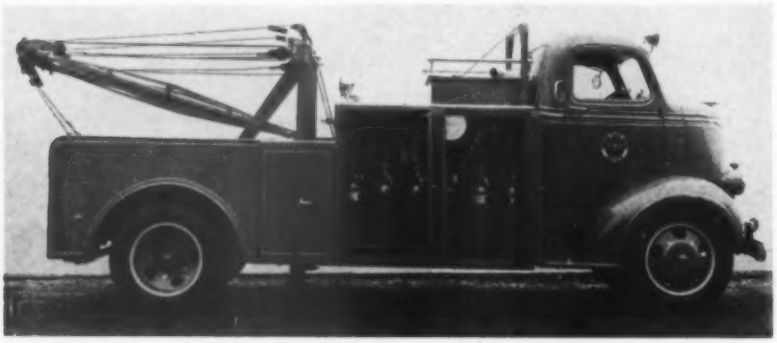


A Maker of Fire Engine Models

James J. Jackson, of Oswego, New York, has developed a hobby into a profession—the making of model fire engines. Jimmy has been a fire buff for years, and for some time was connected with a fire apparatus concern as salesman. His knowledge of the details of fire apparatus is reflected in the models which he constructs. The illustration above shows some of the many designs which he has completed in recent months. One of them, the old steamer, is now in display in the office of this journal.

Highway Crash Trucks

The Sealand Corporation, 544 Iranistan Avenue, Bridgeport, Conn., recently delivered several first aid and crash trucks to the Pennsylvania Turnpike Commission which are to be stationed on the new highway between Harrisburg and Pittsburgh, Pa. Four of these units are mounted on Chevrolet, cab-over-engine-chassis, and two on Four Wheel Drive Chasses.



One of the Sealand Crash Units Delivered to the Pennsylvania Turnpike Commission.

Each truck carries the following equipment: A booster tank with a 100-gallon pump, a foam generator, foam compound, hoists and wreckers, 250 feet of 2½-inch hose, six twenty-pound carbon dioxide extinguishers, a twenty-foot extension ladder which is mounted on a turntable, first aid equipment, and the usual pike poles, crowbars, axes, and bolt cutters.

Firemen Attend North Iowa School

About 120 members of fire departments of North Iowa, Southern Minnesota and Wisconsin registered at the North Iowa District Fire School which was held in Mason City, Ia. The school was presided over by Linden J. Murphy, Iowa State College fire school director, with Chief Dan Shire and members of the Mason City Fire Department acting as hosts.

Many phases of fire fighting were discussed, and the local equipment was inspected. Shortly after the close of the school, an alarm came in offering the visitors a chance to see the department roll to a real fire as a finale.

Private Carriers Must Have Extinguishers

Private carriers in interstate commerce, as well as common carriers, now are required to be equipped with fire extinguishers, according to an order of the Interstate Commerce Commission effective October 15. Before that date, only common carriers were subject to the safety regulations promulgated by the Commission.

Few cities keep records that show what classes of motor vehicles are engaged in fire. However, the records of the following four fire departments probably approximate the national average. These records are for 1939, as shown in the table below, and were supplied by the fire chiefs.

City	No. of car alarms	Common Carriers	Private Carriers	Tank Trucks	Buses	Pleasure Cars
Albany, N. Y.	144	6	11	1	1	125
Buffalo, N. Y.	434	30	44	2	3	355
Newark, N. J.	589	58	61	3	19	448
Evansville, Ind.	146	15	11	1	3	116
	1,313	109	127	7	26	1,044

Grand Haven, Mich., Firemen Get the Yuletide Spirit

This Grand Haven fire station was decorated for the holiday season. Chief Hoebeke and his department conceived the idea of having Fire Headquarters bedecked for Christmas, and carried out the work to completion.

W. M. O'Hara, Milford, Dies

William M. O'Hara, President of the Board of Fire Commissioners at Milford, Conn., for the past twenty-three years, died at his home on New Haven Avenue on November 7 following a heart attack suffered the night previous.

Commissioner O'Hara was one of the best known Fire officials in New England and was cited recently in "Fire Facts" as holding the honor of being the oldest Fire Commissioner in point of continuous service in New England. In 1917, he was first named to head the Milford Fire Commission and each year was re-named as Board President. Mr. O'Hara was sixty-seven years of age.

Through his active interest in all matters pertaining to the fire service, Commissioner O'Hara became one of the state's leading authorities in fire department work. He devoted the greater part of his life to the development of the Milford Fire Department, which, under his supervision came to be known as one of the most efficient in Connecticut.

He was a native of New Haven and came to Milford in 1909, and at the time of his death, was Superintendent of the Milford plant of the New Haven Gas Light Company. He was associated with this Company for thirty-five years. For some years past, he was a member of the New England Association of Fire Chiefs and the Connecticut State Firemen's Association.

Two sons, two daughters, five brothers and three sisters survive him. The funeral was held on November 9 from St. Mary's R. C. Church with interment in Mount Saint Peter's Cemetery, Derby. Fire officials from all parts of the state attended the funeral.

THOMAS F. MAGNER.

Rescue Co. Elects Officers

At the annual meeting of the Rescue Fire Company of Baltimore, Md., elections were held with the following officers being elected for the ensuing year: President, D. C. Kinnemen; Vice-President, Earl N. Bradley; Secretary, Leroy Willey; Treasurer, W. H. Wroten; and Trustees, J. E. Parks, S. S. Stewart, and R. Waller.

The following men were recommended to the City Council and accepted for two-year terms: Chief, P. S. Willey; First Assistant Chief, Wesley Horner; Second Assistant Chief, Luther Hurley; Chief Mechanic, L. Slocum; and Custodian, Herman Cook.

Our inquiring reporter overhauls the firemanic news of the day

The Brothers Take Their Pills To Wage War on Chills and Ills

From Chief Carnegie, Yonkers, N. Y., F.D., we have an interesting item written by Arthur E. Chambers Jr. whom we suspect is related to former Chief Chambers—no?—and which tells how entire personnel of Yonkers F.D. is enlisted in campaign to prevent sickness and loss of time from duty due to "contagious colds."

On recommendation of departmental surgeon, Dr. Wm. H. Gaul, Chief Carnegie calls for self-administration of oral vacine. Vaccine to prevent colds have been distributed to every fire house and, through company commanders to men, with orders to "take one daily, a half-hour before breakfast, for seven days, then reduce number to two pellets until May 1." The Chief says Dr. Gaul told him a study of the doctor's records for past several years revealed that "majority of members of department losing time from duty due to sickness were those who suffered from "contagious colds" during fall and winter. Dr. Gaul wants to prevent members from "catching colds" and possibilities of carrying colds to others. It's said he recommended the vaccine after he'd tried it successfully on members of his own family and private patients. He explained the vaccine is "not 100 per cent preventative" but had proven valuable in nearly every case, the Chief declared, and emphasized that firemen working at fires "perspire freely" and "frequently get soaking wet" and their opportunity to catch cold is great in their ride back to their fire-houses.

"Dr. Gaul is very anxious to prevent contagious colds which might very well lead to grip, pneumonia or other diseases" the Chief is quoted. "We of the uniformed force are most anxious to cooperate in his oral vaccine plan and to cut down the time off-duty caused by sickness. We are grateful for his suggestions and are pleased to have the benefit of his experience, advice and professional care."

* * *

Manhasset Mumblings!

Vamps of Manhasset, L. I., from two companies, answering alarm from Plandome, L. I., estate of Mrs. Martin W. Littleton, Sr., learned to their amazement they were wanted to put out blaze in a black goat's hair Bedouin tent, around which a small, bearded Persian dressed in fancy robe was dancing in ecstasy at sight of his first fire engine. What's more, to get at blaze, the Vols. had to break down ornate gate in head-high wall which bore inscription, *"Gates of Praise. If There Is a Paradise on Earth, This Is It. It Is This, It Is This."*

Entering rudely upon "paradise," with aid of claw-tools and strong backs, the Braves found flames roaring into night from tent, large enuf to house 40 persons. The tent and wall which local gossips call the *"Wailing Wall"* are part of ancient Palestine erected on her estate by Mrs. Littleton, who has "ideas" about "the second coming of Christ." The Persian was an "unknown quantity." Firemen, their eyes popping at the strange sights, asked him what he was doing. He said he'd first come to Plandome as a "Pilgrim" and remained as Mrs. Littleton's assistant. Fire's origin was given as "unknown" by Sgt. Charles McClure of police detail . . . "damage, $2,000."

* * *

When's a Fire a "Fire?"

Out in Rice Lake, Wis., the vamps who answered an alarm, played four streams of water at a red glow visible through billows of smoke pouring from the first floor of a store building. Puff of wind cleared away smoke and revealed that the real fire was upstairs and the red glow they'd been dousing with water was a neon tube around a clock! Did the Brothers see "red" or did they see *"red."* Thanks to contrib' E. L. R.

* * *

Washout!

Firemen of New Orleans, La., labored hard on a Monday (yeah, washday!) to douse fire in laundry supply company building of Rudolph Ramelli. When flames were finally out, Patrolman Wm. Conlin reported: *"Damage to building from fire* $4,000; *Damage to laundry supplies from water used by firemen,* $90,000. Aw, now Patrolman, be reasonable!

* * *

"Illegal" Firemen?

Can this be? T'aint possible! But, according to the wayward press, all these years Des Moines, Ia., firemen have been speeding to blazes under false pretenses.

Thumbing through some old ordinances, a member of the city legal staff discovered that an 1884 ordinance creating the Fire department never had been signed by the Mayor.

On theory that "better late than never" an up-to-date fire ordinance has been started on its way to passage.

* * *

Stork Singes Tail?

While two policemen fought back flames with hand extinguishers and a rural postmaster and a gasoline station attendant served as "midwives", Mrs. Wm. Vanderplum, 23, gave birth to baby son in a blazing ambulance on Roosevelt Boulevard in Philadelphia, Pa.

Mrs. Vanderplum and her husband had been living in a one-room tourist cabin in suburbs. As the wife was being taken to Frankford hospital in volunteer ambulance, Fairmont Park guards raced up on motorcycles to inform startled driver his car was ablaze. Stafford Caldwell, gas station attendant, and Roger Watson, Parkland, Pa., postmaster, who had taken course in Parkland First Aid Company, volunteered services, explaining later *"you gotta be ready for anything."* Mother and child were said at hospital to be "doing nicely."

* * *

Page Mr. Ripley!

Mrs. Mary Ruffley, 66, of Philadelphia, Pa., has had her fill of fire alarms. October 19 she escaped from a burning house while visiting friends. Again—early the 20th, she was forced to flee when flames partly destroyed the rooming house where she lived.

* * *

Give the Gal a Big Hand!

Likely candidate for anybody's collection of interesting people is Mrs. Warren Creasy, one of the few women fire lookouts in the country. Mother of four sons, she arises at 5 a.m. completes her housework, climbs 85-foot mountain tower not so far from Mahanoy City, Pa., and takes up her day-long watch over the forests of five counties. She's been doing it six months a year for thirteen years.

In the tower is a short-wave radio transmitter with which Mrs. Creasy notifies her Chief in Pottsville (Pa.) when she spots a blaze. Sometimes she has to keep track of fifteen fires at a time.

* * *

Hot Off the Ticker

Fat was indeed "in the fire" when a spectacular blaze, fed by fats and grease, swept fertilizer plant in Philadelphia, Pa. . . . W. E. Blevins, Little Rock, Ark., Fire Captain, was killed in an explosion in a burning building. . . . When W. A. Tischer of Vermillion, Ohio, hands in his gold fire Chief's badge on his 80th birthday, he will complete 48 years with Vermillion F.D., 43, as chief. . . . Fire Prevention Week got off to bad start in Guthrie, Okla., when, first day of the week, the Brothers hadda put out a fire in the home of Otis Jackson, Assistant Fire Chief. . . . In Memphis, Tenn., Allan Robinson's auto horn started a fire, but, saved his house from burning. Wires shorted, started fire and set horn blowing. Noise awakened Robinson's maid who found basement garage ablaze, summoned the F.D. . . . Dessie Scott, 24-year old teacher died from burns, as result of effort to save nine little girls, who also were fatally injured when fire swept mountain mission school at Little, Ky. . . . In an acetylene explosion in Perth Amboy, N. J., Fred Muller, 37 and Isaac Frankel 51 were killed. Explosion occurred as Mueller was pouring fluid from container into smaller tank he'd brought with him. . . . During practice fire drill, metal stairs on 4th floor at St. Patrick's School, Mott St., N.Y.C. gave way, dropping three lads 10 feet but not seriously injuring them. . . . Following finding of Charles Tuma, 46, member of Fire Truck Co. 1 of Freeport, L. I., N. Y. dead in Company's H.Q. autopsy was to be performed. . . .

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Answers to these questions will appear in the January, 1941, issue of this journal.

Question 1. Are the smaller flour mills usually built of fireproof construction?
Question 2. In what way are pneumatic conveyors dangerous in connection with fighting fires in flour mills?
Question 3. What is the chief hazard in connection with fighting flour mill fires?
Question 4. Why are gasoline tank fires dangerous?
Question 5. Should water streams ever be used on gasoline tank fires?
Question 6. If so, for what purpose?
Question 7. What fire extinguishing agent other than water is also effective in protecting exposures?
Question 8. Are large or small streams best for fighting brush and grass fires?
Question 9. Why do wire brooms partly lose their effectiveness after operating on a hot brush fire?
Question 10. Are cellar pipes ever used at grocery store fires?
Question 11. If so, for what purpose?
Question 12. At what points in the buildings, do grocery store fires usually originate?
Question 13. Why do old hotel buildings represent a severe life hazard?
Question 14. Do frame resort hotels represent a greater life hazard in winter or in summer, and why?
Question 15. Should ventilation be performed at a hotel fire?
Question 16. For what purpose?
Question 17. Where fire starts in basement of old hotel building, where should first line be placed?
Question 18. Is any precaution necessary when using main stairway for hose line?
Question 19. Why is life hazard greater in hospital fires than in other similar type of buildings?
Question 20. Name two hazardous materials from a fire fighting standpoint encountered in hospitals?
Question 21. An engine is pumping through two parallel lines of 2½-inch hose, each 800 feet in length, siamesed into a single line of 3½-inch hose, 400 feet in length, equipped with a 1½-inch nozzle. 70 pounds is wanted at the nozzle. What pressure will it be necessary to carry at the engine?
Question 22. At what point in a large building is inspection usually started?
Question 23. Should attics be inspected, and if so, why?
Question 24. What other advantage does attic inspection provide?
Question 25. Should power or heating plant in basement receive thorough inspection?
Question 26. Name three points which should be covered by this inspection.
Question 27. Name four substances which should receive special attention at inspections.
Question 28. Need the inspector concern himself with condition of private fire appliances?
Question 29. Why should business establishments be inspected periodically?
Question 30. What equipment is needed by the uniformed inspector in his work?
Question 31. What is the most common cause of fire?
Question 32. What is meant by a simple fracture?
Question 33. What is meant by compound fracture?
Question 34. What precautions should be observed in handling broken limbs?
Question 35. What is the name of a piece of wood used for bracing a fractured limb?
Question 36. What is the name of a piece of cloth used for supporting a broken limb across the chest?
Question 37. What is the first thing to do when called upon to render first aid to a person with a fractured skull?
Question 38. What next?
Question 39. What is the first action you would take in the case of a man with fracture of leg below the knee?
Question 40. What is meant by a burn of the first degree?
Question 41. What is meant by a burn of the second degree?
Question 42. What is meant by a burn of the third degree?
Question 43. Is it good practice to carry charged lines up ladders more than twenty-five feet?
Question 44. When ascending a ladder with a charged line, with which hand do the men grasp the hose?
Question 45. When taking empty line up ladder, how does first man up carry the hose?
Question 46. How do other men carry it?
Question 47. If nozzle man has no life belt, how does he support himself on ladders?
Question 48. In taking a hose line down a ladder from the fifth floor what is the first move?
Question 49. How many men, according to rule, should be permitted on ladders from 20 to 30 feet at one time?
Question 50. When stretching hose up a ladder, how much hose is allowed for each story?
Question 51. Where hose is stretched up stairway, how much hose is allowed per story?
Question 52. When the order is given to take line out of building by way of stairwell, what is the first action to take?
Question 53. Why are paint spraying installations hazardous?
Question 54. What is the purpose of the spray booth and appurtenances?
Question 55. Are automatic sprinklers of any use in reducing the fire hazard of spray booths?
Question 56. What types of fire extinguishers are particularly effective for hand use on spray booth fires?
Question 57. What is the chief hazard in connection with a dry cleaning plant?
Question 58. What two solvents are commonly employed in such establishments?
Question 59. Is automatic ventilation for the removal of inflammable gases, created in a dry cleaning establishment, necessary?
Question 60. At what point, and why, should the intakes of automatic ventilators be placed?
Question 61. State one source of ignition of inflammable vapors in a dry cleaning plant?
Question 62. Name two auxiliary fire protection systems which have proven effective in connection with woodworkers?
Question 63. What is the duty of the Captain of a company (in charge at fire) before leaving fire grounds?
Question 64. What is the duty of the Assistant Chief regarding absences due to sickness or injury of members?
Question 65. When does the Assistant Chief assume command at a fire?
Question 66. When a Battalion Chief arrives at a fire, under what conditions does he assume command?
Question 67. What is the duty of a Battalion Chief with regard to discipline of men in his battalion?
Question 68. What action shall a Battalion Chief take with regard to companies under his command when they are no longer needed at a fire?
Question 69. Where change of address of a man in his battalion is reported, what action should Battalion Chief take?
Question 70. When a meritorious act on the part of a man in his battalion is reported, what action should a Battalion Chief take?
Question 71. What is the duty of a Battalion Chief with regard to requisitions for supplies submitted to him by a subordinate officer?
Question 72. If a Battalion Chief wishes additional apparatus at a fire, how should he secure same?

A Dog, Man's Best Friend, Exhibits His Loyalty to His Home

In spite of the intensity of a four-alarm lumber yard fire which was sufficient to char the front of this wet bedraggled little dog's home, the dog stayed at his post and refused to leave.

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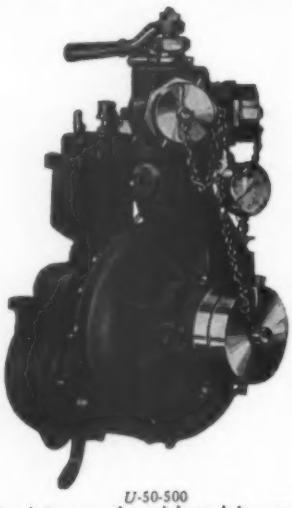
Barton American Midship

FIRE APPARATUS CENTRIFUGAL PUMPS



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Offered in single and duplex multistage models 500, 600 and 750 G.P.M. capacities.

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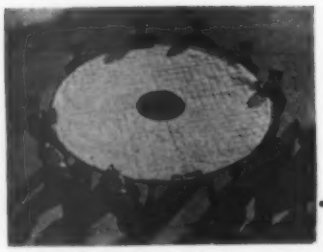

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Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Correction

In the Question and Answer appearing in the August issue of FIRE ENGINEERING, involving calculations for Bresnan distributor, figures for a Jumbo distributor were used, rather than for the distributor commonly found in fire departments today.

The use of the larger distributor in this particular problem resulted in excessive friction loss, and would entail pressures at the engine which would be abnormally high.

The following information on the standard type of Bresnan distributor is therefore in order:

The most commonly used distributor in the field is of the Bresnan type. The table below gives the discharge of a Bresnan distributor at different pressures.

Table of Discharges of Bresnan Distributor

Nozzle Pressure	Discharge in G. P. M.
20	192
25	222
30	234
35	253
40	271
45	287
50	303
55	318
60	332
65	345
70	358
75	371
80	383
85	395
90	406
95	417
100	428

For calculating the discharge from a Bresnan distributor, calculate it on the basis of a nozzle of 1.2-inch diameter. Although the Bresnan Distributor has a combined opening equivalent to a 1¾-inch nozzle, its discharge at various pressures is approximately that of a 1.2-inch nozzle at the same pressures.

For calculating engine nozzle (distributor) pressures, the value of K for the commonly used Bresnan distributor on a 2½-inch hose is 0.207.

Example: A pumper is delivering water through a 500-foot line of 2½-inch hose, to which is attached a Bresnan distributor. Thirty pounds is wanted at the distributor. What engine pressure is needed? What will be the discharge per gallons per minute?

Answer: E. P. = N. P. (1.1 + K. L.)
N. P. is 30 pounds.
K for Bresnan distributor on a 2½-inch hose is 0.207
L = 500 ÷ 50 = 10
Then E. P. = 30 (1.1 + 0.207 × 10)
= 30 × 3.17
= 95 pounds.

The discharge is found by a formula:
Discharge = $297 \times d \times d \times \sqrt{p}$
= $29.7 \times 1.2 \times 1.2 \times \sqrt{30}$
= $29.7 \times 1.2 \times 1.2 \times 5.4772$
= 234 g.p.m., approximately.

Note in the above, the figure 1.2 is used in place of 1¾ for the nozzle diameter. As noted previously, from the standpoint of discharge, the distributor has a nozzle equivalent to a 1.2-inch plain nozzle. Although the actual area of the 9 ports of the Bresnan distributor totals an area equivalent to a 1¾-inch nozzle.

National Standard Thread

To the Editor:

Will you please quote thread specifications for National Standard fire hose couplings in sizes ¾-inch chemical, 1-inch, 1½-inch, 2½-inch, 3-inch, 4½-inch and 6-inch. Also Baltimore standard thread specifications in 2½ and 4½.

Are there any other threads besides the above that are in reasonably common use on the Atlantic seaboard (excepting Philadelphia and other cities using snap couplings)?

K. G. M.

Answer: The National Standard fire hose coupling threads are as follows:
(American Standard Threads)

Nominal Size	Threads per Inch	Outside Diameter Male Thread
¾ in.	8	1.375 in.
1 in.	8	1.375 in.
1½ in.	9	1.990 in.
2½ in.	7½	3 3/16 in.
3 in.	6	3⅝ in.
3½ in.	6	4¼ in.
4½ in.	4	5¾ in.

For thread details, see bulletins A. S. A.—B-26—1925 and A. S. A.—B-33.1—1935, issued by the American Standards Association, 29 West 39th Street, New York City.

For hose threads at Baltimore, the following is offered: Nominal thread, 2½ inches—National Standard, 4½ inches—4 threads per inch, 5½ inches outside diameter male thread.

Threads on the Eastern seaboard are mainly National Standard, except many use 8 thread, 3-inch diameter (outside), in New Jersey especially around New York City. Several cities in New York State use 8 thread, 3 1/16 inches outside diameter. Many Pennsylvania threads are not standard, but are several uncommon combinations.

Rescue Operations at Ammonia Fire

To the Editor:

Some time ago, some men were making repairs on an ammonia pipe in a cold storage plant. The ammonia pipe exploded, and three men lost their lives.

The basement where the accident happened is divided into two parts, east and west rooms. The men were trapped in the east room which had only one door leading to the west room. The west room had an elevator shaft on the north end, and a grade door underneath a platform on the south. The grade door was about half way between the basement floor and ceiling, and was the closest entrance to the door leading to the east room (cooler). How would a rescue be made?

Would it be possible to enter the basement from the south and try to force the fumes up the elevator shaft to the north with the aid of a line?

Would an oxygen mask be the logical one to use in combatting this type of fumes? W. M.

Answer: If the cold storage refrigeration system had an ammonia release to the atmosphere, this should be opened at once, before any attempts at rescue are made.

If it has no such release, the valve carrying the compressed ammonia to the east room should be closed (if system is so equipped).

The use of water spray is very effective in absorbing the ammonia in the atmosphere, but it is very likely that the men would not be able to operate in the basement without the protection of oxygen masks. The oxygen helmet is preferable to any other type of protective apparatus in such a case, for the ammonia concentration in the air may be very heavy.

Furthermore, the men should wear rubber trousers, if they are available.

The elevator shaft, if it is enclosed, could be used to aid in removing the ammonia from the west room, provided the elevator shaft could be opened at the top. Care must be observed, however, not to permit ammonia to rise in the shaft if it would be likely to seep out of the shaft at various floors of the building.

The rescue of the men without proper gear would be exceedingly hazardous, even though spray nozzles were available for use in the basement.

Soft and Hard Suction

To the Editor:

In connecting a pumper to a hydrant, in a low pressure region, or on a dead end, should hard suction or soft suction hose be used?

N. G.

Answer: If hard suction is used on a pumper, and the connections are airtight, more water can be taken from a main, where a partial vacuum is apt to be formed, than by using soft suction hose.

The pressure in the main pushes the water out of the hydrant, while a pumper operating at a vacuum also "pulls" the water out of the hydrant. Combination of the two will give greater flow from

the hydrant than the pressure in the main alone. This is so, of course, when the pressure in the main drops to but a few pounds when flow starts.

Thermite Fires

To the Editor:

How can thermite fires be extinguished?

J. L. H.

Answer: Thermite fires can be checked though not extinguished, by the application of powdered talc, or other dry, inert material. With a small thermite fire, extinguishment may be accomplished by using a lot of water. The danger of applying water to large quantities of thermite is in the possible explosions resulting therefrom. Fog nozzles are particularly effective in operating in thermite fires. The fog keeps adjacent combustible material wetted down while the thermite burns out.

Fire Detection Without Axe-Work

The problem of locating fire which has possibly mushroomed up through walls and ceilings has been solved in the past only by feeling the walls and ceilings with the bared hands and sinking the business end of an axe into the hottest spot or spots. Through the invention of a new mechanism, this axe-work may be outmoded. It is said that through its use, there will no longer be a necessity for the ladder crews to chop openings in walls and ceilings to facilitate the work of the hosemen.

This mechanism, known as the "hot spot detector," records the slightest rise in temperature over a confined area. It resembles a small movie camera in shape. It is fourteen inches long and six high, and two wide. On the top of the detector there is a small glass tube similar to the spirit tube of a carpenter's level. When the detector is directed to the "hot spot" of the wall, oscillating red waves flash across this tube. The eye or focusing mechanism is a lens which transmits the detected heat rays to sensitive coils within the device.

At the present time, the heat detector has been given a try-out only in a few cases. However, it has been reported that the results that were obtained were entirely satisfactory. The fire was located with unerring accuracy, and eliminated the necessity of ripping out floors and ceilings, a procedure dreaded by both property owners and insurance interests.

The unit was invented by Dr. Hammond Vinton Hayes, formerly Chief Engineer for the American Bell Telephone Company and his collaborator, Philip N. Smith, an electronic expert formerly with the Radio Corporation of America. The detector will be placed on the market shortly by the Carpenter Manufacturing Company, 179 Sidney Street, Cambridge, Mass.

William Bennett Dead

William Bennett, aged 80 years, retired Chief of the Bureau of Fire, Pittsburgh, Pa., died in his home on November 10, after an illness of two weeks.

Chief Bennett was born and brought up in Pittsburgh. At the age of twenty-nine years, he joined the fire department. In 1890, he was appointed a Lieutenant of Engine Company No. 2 and four years later, he was made Captain of the Company. He held this position for ten years after which he was made a Battalion Chief. In 1918, he was appointed Chief of the department, succeeding the late James F. Richards. During his many years of service, Chief Bennett attended and was in command of many of the largest fires that visited Pittsburgh during those years.

Chief Bennett was a member of the Pittsburgh Firemen's Relief and Benevolent Association, serving as Treasurer for many years, the Pittsburgh Veteran Firemen's Association, and the Pennsylvania State Firemen's Association. He was a member of the International Fire Fighter's Association until he was appointed a Chief Officer, when he withdrew his membership from this organization.

Deputy Chief John F. McDonough and His Aid, John W. McDonald, Demonstrate the Hot Spot Detector

Cover Picture Story

A tank truck, carrying gasoline, was discovered to be on fire in the congested area in Tulsa, Okla., by firemen as the transport passed the Central Fire Station. Flames were seen coming from fittings on the top of the rear tank compartment. The driver was unaware of the fire until it was brought to his attention by warnings from numerous persons discovering the fire. He abandoned the truck about 150 feet from the fire station.

The Assistant Fire Chief, who had witnessed the burning truck, ordered one pumper into service and turned in an official alarm. First, the firemen attempted with the aid of one stream to separate the fire from the vapor emitting from the tank, but several such attempts failed. In the meantime, additional lines were used to keep the tank cool. The firemen then tried to smother the fire by covering with wet tarpaulins and directing streams from fog nozzles on the covers. However, a snug fit could not be obtained between the cover and the tank because of the tank fittings so that this effort failed. Then the use of foam was tried, but the contour of the tank and the pressure of escaping gases made this method ineffective.

Bulging of the tank caused the firemen to withdraw a safe distance for fear of an explosion; however, they continued to operate streams on the tank. A short time following this, the clamps holding the manhole cover on the rear compartment gave way, followed by a sudden surge of flames, which reached up to about sixty feet. Several firemen were burned, and many spectators endangered as a result.

Buildings on either side of the street were in very serious danger during the twenty minutes that the fire burned with its maximum intensity. Hose streams were used to form a curtain of water in front of these buildings which prevented any serious damage.

A little over an hour after the fire was discovered, the fire was extinguished.

After an investigation, it was concluded that there had been some overflow of fuel from the partly opened manual valve on the rear compartment; this overflow becoming ignited in some unknown manner.

Firemen Complete Course

The volunteer firemen of Greene and Columbia Counties have completed their annual training courses, which consisted of a series of eight lectures based on elementary training especially adaptable and applicable to volunteer firemen. The examinations consisted of questions based on the material delivered at the lectures. Retired Battalion Chief J. J. Deasy was an instructor at both schools.

You get

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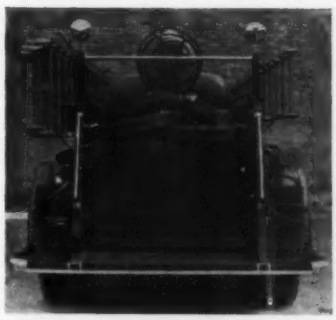
SAFETY
ECONOMY

An effective pumper for rural protection, built for the Countryside Fire District, Mundelein, Ill. Equipped entirely with Aluminum Ladders.

with ALUMINUM FIRE LADDERS



Rear view of the Mundelein, Ill., pumper, showing 36 ft. Aluminum Ladder with staypoles and 12 ft. Aluminum Roof Ladder. (Photos courtesy W. S. Darley Co., Chicago.)

In fighting fires, speed is an absolute necessity . . . and that's where Aluminum Ladders fill the bill. Because of their compact lightness, these ladders can be raised and handled faster, and with fewer men, than ordinary ladders.

But light weight is not their only good point. Twice as strong as ordinary ladders, they can support heavier loads without breaking—they bend, rather than break suddenly, when overloaded. They can't burn or rust, and they always keep their attractive appearance.

If your department is using old-fashioned ladders, be sure to investigate the extra advantages of Aluminum Ladders. The ***first*** cost is the ***last*** cost.

Write for full information.

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Buckeye Shut-off Nozzles *will not leak!*

Buckeye Nozzles *will not leak,* nor will they open or close under pressure when partially shut down. Yet the shut-off works easily under pressure. The one and only adjustment is simplicity itself. All working parts are accessible. A smooth, clean, tapered waterway insures a perfect stream.

Now Buckeye has a Fog Developing Device (Fig. 948) which will fit your present shut-off nozzle. The Buckeye Fog Tip (Fig. 946) can be carried in the fireman's pocket. It quickly converts any shut-off into an efficient fog nozzle.

Write for complete details on these shut-off nozzles or any other Buckeye fire fighting equipment, consisting of warning whistles, Roto-Rays, Moto-Rays and Expanders.

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Shut-off Nozzles · Roto-Rays · Whistles

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READY FOR EVERY EMERGENCY

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THE LIGHT THAT NEVER FAILS

A Homelite gives you 1800 watts—enough for a battery of floodlights. And it is completely automatic. Voltage stays at 110 regardless of load. Light is steady—flickerless. Complete rugged unit is weather-proof, dust-proof, water-proof, fool-proof.

Send for bulletin.

Specially prepared for fire departments. Gives complete information. Illustrated.

HOMELITE
CORPORATION

812 Riverdale Avenue, Port Chester, N. Y.

Correspondence

Ambulances for Britain

To the Editor:

I believe there is something that we of the Fire Service can do in these trying times which will be our "good deed" and will be most helpful and appreciated.

As you know, the "Battle of England" is being fought day and night by the regular and auxiliary firemen of the British Isles, and with their brothers in the army, navy and air forces. You know, too, what terrible punishment these men are taking and how urgently they need all the help that the Democratic world can give them.

Therefore, it seems to me that we can do something besides just send brother firemen over to England to get such ideas as we can to be prepared in this country against the day when we may be attacked. We can give some sort of practical as well as the spiritual aid to our Brothers abroad.

My idea is that the Fire Service of this country, through either the International Fire Chiefs Association, or some central source, collect the funds and invest them in at least one and preferably more, ambulances, to be sent to England in the name of our Fire Service, for duty in connection with the work of the Fire Brigades and Auxiliary Fire Corps of that country during the war.

I know this organization would be happy to lead off with a check for at least $25 and perhaps more, and that every accredited fire organization in the Country would dig into its treasury. I know that many individual officers and men of the Fire Service would contribute to such a worthy cause. It only remains for someone to start the ball rolling.

Let's get some action!

Cordially and fraternally yours,
ROI B. WOOLLEY.

Saving Life with Life Nets

To the Editor:

We have read with much interest your articles and editorials in FIRE ENGINEERING on the British Fire Service, especially those articles on "Fire Service During and Following Air Raids."

These articles certainly do bring out the great fire service job that the London Fire Department is doing, and it undoubtedly has much effect upon our National Preparedness Program that is now facing the fire public.

In these articles fire fighting seems to be the main issue, and we agree with you that the London Fire Brigade must have many pieces of motor apparatus, fire hose, and the like, to fight these blazes resulting from incendiarism and sabotage activities.

However, it must be remembered that fire fighting is not the only type of fire service, for there still remains an almost equally important service; that of life saving.

From London we hear of persons being trapped in flame-filled buildings; we hear of incendiarism activities . . . the thermite bomb, and the thermite bomb, and the thermite "electron jacket" bomb, against which water lines are helpless, and fire fighting and rescue work must be immediate. Undoubtedly

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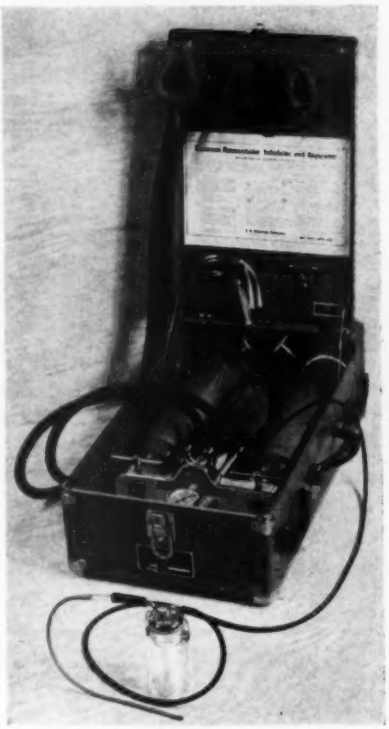
ASPHYXIAL DEATH



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EMERSON RESUSCITATOR, INHALATOR & ASPIRATOR

It is completely automatic and self-adjusting.

It is small and compact, weighing only 60 pounds, complete with tanks.

It operates on a new mechanical principle, employing no pistons, no leathers and no oil.

And each unit carries a two-year factory guarantee.

Be sure to include this life saving equipment in your current budget!

J. H. EMERSON CO.
22 Cottage Park Avenue
Cambridge, Mass.

there are sabotage forces at work in factories and utilities' buildings, where hundreds of workers are bunched together at one time. What then about rescue work and life saving in London? It certainly must be going on, but yet no mention of it is made in your articles, excluding the continual stress of aerial ladders.

We particularly refer to that section of the editorial in the November issue of your FIRE ENGINEERING magazine, captioned by the statement, "The Aerial Ladder Proves Itself," and we quote as follows:

Protection of Upper Floors

"American fire departments might give a little thought to the subject of handling upper floor fires in high buildings when roof tanks and standpipe systems are put out of service by aerial attacks. These two units would be made inoperative instantly by a high explosive bomb. More, and longer, aerials may prove the answer to the problem."

We realize that the aerial ladder is not used only in fire fighting, but also life saving in the form of rescue work; in fact, we further realize that the aerial ladder is used before any other piece of equipment in saving a life trapped in an upper story.

But the point we are getting at is this: that many times ladders can't be used safely, and during these times with persons trapped in flames high above the ground, life nets could be used.

May we again repeat that part concerning ladders. Ladders can't always be used to save lives, because as you know, they have a "safe reach limit," and the building may be bursting with flames which would tend to oppose the safe use of ladders. Then again, there may not be enough ladders to accommodate all persons trapped. With this there also enters into the picture another factor; ladders may not be able to be maneuvered in small alley-ways, and other sections blocked with debris. These points are well worth while considering, when giving thought to life saving and aerial ladders.

Demand for Life Nets

From the above we conclude that there is a definite demand for the life net in the mentioned instances. Further, especially in London, the thought comes to mind that life saving nets should be distributed about the city; thus, when a great number of fires are taking place at one time, and Departments find it difficult to get to definite sections, due to numerous calls and blocked thoroughfares, thus lives trapped in flaming structures could be saved by civilians obtaining the nets and holding them in action. It must also be remembered that life nets when folded in quarters or halves, don't require much storage space, and can be handled very easily.

The above are our thoughts in the matter, and to us, the use of life nets as described seems very logical. If our thoughts are correct, then life nets and their part in life saving should be brought before the fire public, just the same as aerial ladders or any other piece of equipment, are being continually stressed.

Very truly yours,
CHARLES C. LENZ,
President,
Atlas Fire Equipment Co., Inc.

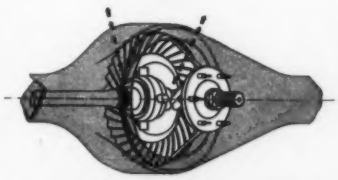
Install the THORNTON Automatic Locking DIFFERENTIAL and Cut Skidding Risk

TRACTION when and where you need it — Keep going when mud, sand, ice and snow stall trucks with only ordinary differentials.

Save gas, oil, tires, chains—Be safe on slippery pavements!

The THORNTON Automatic Locking DIFFERENTIAL eliminates spinning of one drive wheel because both rear wheels must rotate when power is applied. Quickly installed in standard rear axle differential carrier without special tools.

Endorsed by truck and bus operators all over the U. S. A.



Easily installed without special tools — Takes the place of the regular differential in the rear axle housing.

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Now, let WS MASTER-LIGHTS give your men *MORE SPEED AND SAFETY* in those vital first 5 minutes at the fire! Powerful FULL MILE beam lets your men SEE even in heavy smoke! Weighs only 12 lbs. Long-life, rechargeable battery. Perfect balance—carries anywhere easily—gives your men the light they need *where* they need it for best work!

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Let *performance PROVE* WS MASTER-LIGHTS increase your men's efficiency! MAKE YOUR OWN TESTS! Write now for free Fire Chief Folder illustrating WS and many other MASTER-LIGHTS that will help you. Select your lights. We'll send them to you for 30-day Free Trial! You'll find MASTER-LIGHT equipment means *quicker work*—reduced fire losses! Send for your free Folder NOW!

CARPENTER MFG. CO.
200 Sidney St., Cambridge, Mass.

Quincy Cuts Force

(*Continued from page 602*)

taken various steps to meet it. Some immediately started paying the men the full salary while others took action similar to that of Quincy.

While dropping thirteen men from the police department has its handicaps, crippling of the service will not be as bad as that in the fire department. Contracts have been awarded for the installation of two-radio equipment for the police department, and the additional prowler cars with full crews can cover more territory and do the work the thirteen discharged men could have done. Patrolmen were to have been reassigned to radio work.

None of the discharged policemen were entitled to pensions. Of the nineteen firemen released, six have their twenty years in for a total of 164½ years. The oldest is Dick Thuman, driver-pump operator of Engine Company 7, who had forty-six years of service, a record never before equalled in the fire department here.

Army Cantonments to Need Chiefs

There will be approximately two score of openings for Fire Chiefs and Assistant Chiefs at army cantonments throughout the country within the next few months. The Chiefs' salaries will range from $2,600 to $3,500 and the Assistant Chiefs will be $2,300. The positions are to be civilian in nature and under U. S. Civil Service Classification and Regulations, with appointment from an eligible list established upon the basis of qualifications and examination. The men who obtain the positions will have charge of all fire protection and fire prevention in military establishments and supervise military personnel assigned to the establishments.

Regarding qualifications, the applicant must be a citizen of the United States. Applicant for Fire Chief must have passed his twenty-fifth birthday, but not his fifty-seventh birthday. Applicant for the Assistant Fire Chief must have passed his twenty-fifth birthday, but not his fiftieth birthday. Each must have had not less than three years experience as a full paid officer or the equivalent in supervising responsibility with an organized fire department having motor apparatus.

Quarters for single men will probably be provided at the station houses, but family quarters will have to be provided outside of the military camp at the expense of the individuals. Other living expenses will probably have to be borne by the individual.

Formal announcement of Civil Service examinations will be made through the various Civil Service District Offices, and notices will be posted publicly in Post Offices.

New Assistant Chiefs Appointed

Frank E. Barrier and W. H. McClure were appointed Assistant Fire Chiefs in Ottumwa, Iowa, completing a reorganization of the Ottumwa Fire Department. Chief S. D. Russell, who recently succeeded B. A. Meany, recommended the appointment of two chiefs so that there would be an Assistant Chief on duty at all times.

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Life Saving Net. The interwoven net mounted on a steel frame with 32 shock absorbers. Training Nets and Structures. Ladder Belts. Life Size Training Dummies. Announcing a new superior achievement, a canvas bottom life saving net, no rods, no straps, no rivets to cut the canvas.

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Fire Department Extinguishers
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38 years service in the fire field

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Prompt service - Quality products

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Send for illustrated folder on the New Elkhart Mystery Nozzle.

ELKHART BRASS MFG. CO.
ELKHART, INDIANA

Meeting of Maine Chiefs

(*Continued from page 605*)

office of Secretary-Treasurer, A. G. Balquire, Norway, was appointed Assistant Secretary-Treasurer.

The Board of Directors elected were as follows: Chief Oliver T. Sanborn, Portland; Chief John F. Eldredge, Kennebunkport; Chief Giles Frost, Norway; Chief Allen F. Payson, Camden; Chief J. W. Randlette, Richmond, and Chief William H. Clifford 3rd, Cape Elizabeth; Sgt.-at-Arms, Chief Harley Ellis, York Beach. The choice of place of meetings for 1941 was left up to the Board of Directors, for later report.

Dinner was served to members and guests at the York Harbor Reading Club at which 135 were present. A feature of the dinner session was the presence of several members of the York Veterans Firemen's Association in their red shirts, and the reading of an original poem written for the occasion of the meeting by a member of the Veterans Organization.

The afternoon session was resumed at the Town Hall. Chief Daniel B. Tierney, Arlington, Mass., and now Secretary of the International Association of Fire Chiefs, and a long time friend of the Maine Chiefs Association, gave the members a word picture of the trip to the Spokane convention, and the many incidents and side trips of the convention proceedings. Chief Seldon Allen of Brookline, Mass., and Past-President of the International and New England Associations, the next speaker on the program, showed the moving pictures of the Brookline, Mass., training field, the evolutions of the drill school, many celebrities of the fire service, and other interesting reels. The meeting closed with a buffet supper served at the central fire station by the York Village department.

Chief P. J. Harty Dies

P. J. Harty, Fire Chief of the Youngstown Sheet and Tube Company, Youngstown, Ohio, died at his home recently at the age of sixty-eight.

Chief Harty headed about 800 volunteer firemen in the plant and was credited with preventing any serious fire in the plant since he joined the safety and fire prevention department of the plant in 1916. Many of the fire prevention methods used by the plant were originated by Chief Harty and copied by many cities.

For twenty-three years, he was Secretary of the Association of Fire Chiefs of Ohio. He was active in the Volunteer Fire Chiefs' Association of Ohio and the Great Lakes Division of the International Fier Chiefs' Association.

October Fire Losses $22,091,140

Fire losses in the United States during the month of October, according to the estimate given out by the National Board of Fire Underwriters, amounted to $22,091,140. This is the eighth consecutive month that the losses were less than the losses of the corresponding month of last year. The October fire loss is nine per cent lower than that of October, 1939, but 4.2 per cent higher than the total losses for September of this year. The ten months total for this year is less than the ten months total of 1939 by about $4,000,000.

NIGHT and DAY—

thousands of feet of Quaker fire hose are being manufactured to protect some home, some plant, some institution, some public building against the ravages of fire.

With Quaker's enormous production capacity, orders for any amount—500 to 500,000 feet are being handled promptly.

QUAKER FIRE HOSE is flexible. Easy to handle. Coils readily. Fully Guaranteed.

Every foot is expertly made. Special selected long staple cotton yarn used. Tube of "live" smooth rubber. Supervision by experts throughout, including final tests.

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Multiple Jacket Hose made in four distinct and different constructions.

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Give Firemen protection AGAINST CARBON-MONOXIDE *of course* but also AGAINST SMOKES and FUMES

Do the masks that you now use really protect a man against *smoke suffocation* and *fume poisoning?* Are you sure? You can easily test them. Write on official stationery for Acme Smoke Tester, which will be mailed FREE.

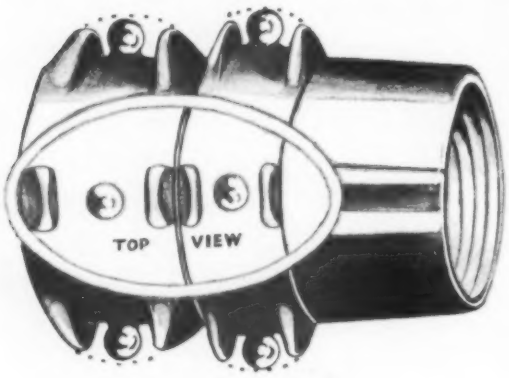
HERE is an All-Purpose Mask that, besides effective protection against *all* injurious gases, also actually gives better than 95% protection against all Smokes and Fumes.

This incomparable mask is the Acme Type FD—one of a line of masks and other safety appliances for fire-fighting, industrial, and military uses, manufactured by Acme Protection Equipment Company, 3604 Liberty Avenue, Pittsburgh, Pennsylvania.

Write for new Folder 401.

New Improved ACME
full-vision
ALL PURPOSE GAS MASK

Announcing—the New **GUARD LUG COUPLING**



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The GUARD LUG is the *18th* patent on fire equipment awarded since 1925 to personnel now identified with this Company. All of these patented products still being used showing their value to fire industry. You take no chances on specifying products made by an organization with such a background.

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Where-to-Buy Headquarters of the Fire Protection Industry

We carry one of the most complete lines of Fire Fighting Supplies of any distributor in the field.

Regardless, whether you need a spanner, or supplies for a complete department, we can take care of your requirements.

Send us your next order, let us show you how we can save you time and money, and if you don't have a copy of our latest catalog, send for one today.

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COVER'S NOD and SHAKE SMOKE MASK

Carry It in Pocket. Slip on in a Jiffy. Positive Protection to Eyes Against Smoke and Saves the Lungs.

WHY GET SICK?

Price $48 per Dozen

Upon receipt of $4.00 one will be forwarded as a sample postpaid.

H. S. COVER
Station A, South Bend, Ind.

Resolutions Adopted for Army Camp Protection

At a meeting of the Fire Chief's Club of Massachusetts on November 20, a set of resolutions were adopted concerning the conditions that exist in army camps in Massachusetts. Official copies of the resolutions are being sent to the Secretary of War, the Quartermaster General, the New England Fire Insurance Exchange, the National Board of Fire Underwriters, and the National Fire Protection Association.

The resolution follows:

WHEREAS, at a regular meeting of the Fire Chiefs' Club of Massachusetts held in Boston on Wednesday, November 20, 1940, reports were presented by several members in connection with the lack of adequate fire protection in the frame buildings erected and being erected by the United States Government at Camp Edwards, Mass., for the purpose of housing approximately 30,000 young men to be trained for service in the National Defense of this Country and that similar conditions exist at Fort Devens, Ayer, Mass., and Westover Field, Chicopee, Mass., and

WHEREAS, in the opinion of the members a serious life hazard from fire exists which, increased by the high winds frequently prevailing, is likely to cause loss of life and facilities to the impairment of the National Defense Program, and

WHEREAS, it has been reported that it is the intention of the National Authorities to depend on the installation of a locally operated and maintained telephone service for the purpose of turning in an alarm in case of fire, and

WHEREAS, it is a matter of public record that the National Board of Fire Underwriters, as a result of their surveys and experience, have maintained that

"The loss of time, incident to the repetition and rehandling of alarms with telephone transmission, may be the cause of serious delays and is liable to result in serious loss of life and to prevent the extinguishing of fires in their incipient stage; the ever-present danger of incorrect locations being given in transmitting alarms may be the cause of a conflagration. The prime requisites of a fire alarm system are accessibility, speed of transmission and reliability, all of which may be lacking in a telephone system. * * * The desired factors of accessibility, reliability and promptness can best be obtained in their highest form only by the installation of a reliable, modern fire alarm telegraph system."

Now, therefore, be it

RESOLVED, that from the experience of the members of the Fire Chiefs' Club of Massachusetts a telephone system alone will provide only an inadequate, unsuitable, and dangerously unreliable method for sounding alarms of fire, it is their considered opinion that for the adequate protection of life and facilities a modern fire alarm telegraph system at least equivalent to that required for the average municipality of equal population is essential at Camp Edwards, Fort Devens and Westover Field, and be it further

RESOLVED, that the members of this Club go on record strongly urging the National Authorities to take steps immediately to provide these facilities and that a copy of these resolutions be forwarded to the proper authorities in Washington.

Fireworks Control for Maryland

A new fireworks bill is soon to be introduced in the Maryland Legislature which will prohibit the promiscuous sale and use of fireworks in that state. A hard battle over the bill is expected. Some time ago, Insurance Commissioner J. B. Gontrum sought by an order to prohibit the sale and use of fireworks in the state except under certain regulations, but was unsuccessful through a court decision which held that the law did not empower him to take such action.

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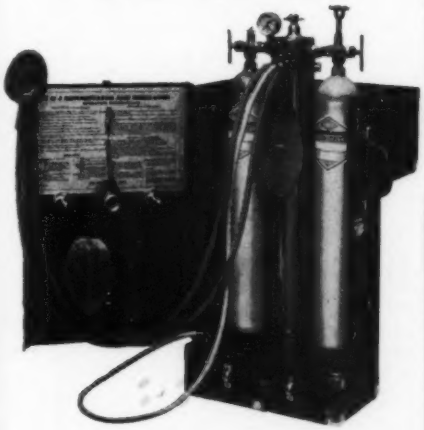
Prepare for your fight against smoke and poison gas, drowning, etc., with America's time tested, proven, MECHANICAL RESUSCITATOR

The "E & J"



Accepted by the Council on Physical Therapy of the American Medical Association

"ONE seeing is worth a thousand sayings."

We invite you to arrange for a demonstration.

The quality of any product is dependent upon the integrity of the manufacturer and his confidence in the future.

E & J MFG. CO.

GLENDALE, CALIF.

17 East 42nd St. . . . . New York City
581 Boyleston St. . . . . Boston
Drexel Building . . . . . Philadelphia
4448 W. Washington Boulevard . Chicago

Convention Dates

*Jan., 1941—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Date and place of quarterly meetings not fixed. Secretary, Fred A. Trowbridge, Morristown, N. J.

*Feb. 26, 1941—CENTRAL WESTERN (OHIO) FIREMEN'S ASSOCIATION. Bi-monthly meeting, Lewisburg, Ohio. Secretary, Roger C. O'Donnell, Covington, Ohio.

*May, 1941 (tentative)—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual Meeting, Grand Island, Nebr. Secretary-Treasurer, Ray Tiller, Waterloo, Ia.

*May, 1941 (tentative)—NORTHWEST FIRE SCHOOL. To be held at the University of Minnesota, Minneapolis, Minn. Committee Chairman, W. L. Bundy, Alexandria, Minn.

*May 5-6, 1941—KANSAS STATE FIREMEN'S ASSOCIATION. Annual Meeting, McPherson, Kans. Secretary, K. D. Doyle, Wawego, Kans.

*May 14-16, 1941—NORTH CAROLINA FIRE COLLEGE AND DRILL SCHOOL. Annual Meeting, Charlotte, N. C. Secretary, J. C. Fitzgerald, Asheville, N. C.

*May 19-21, 1941—NEW YORK STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting, Utica, N. Y. Secretary-Treasurer, Chris W. Noll, Poughkeepsie, N. Y.

*June, 1941—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual Meeting, Conway, S. C. Secretary-Treasurer, Paul E. Wilburn, Union, S. C.

*June 2-6, 1941—SOUTH DAKOTA FIREMEN'S ASSOCIATION AND FIRE SCHOOL. Annual Meeting, Sioux Falls, S. D. Secretary, M. C. Sullivan, Parkston, S. D.

*June 9-11, 1941—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. Annual Meeting, Alexandria, Minn. Secretary, Fred Pfaender, New Ulm, Minn.

*June 12-14, 1941—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting, Lancaster, Pa. Secretary, Charles E. Clark, Box 217, Wayne, Pa.

*June 19-21, 1941—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. Annual Meeting, Poughkeepsie, N. Y. Secretary, Chris W. Noll, Poughkeepsie, N. Y.

*June 25, 1941—CENTRAL WESTERN (OHIO) FIREMEN'S ASSOCIATION. 11th Annual Convention, Ft. Loramie, Ohio. Secretary, Roger C. O'Donnell, Covington, Ohio.

*July, 1941—TEXAS FIREMEN'S TRAINING SCHOOL. Annual Meeting, A. and M. College of Texas, College Station, Tex. Director of Firemen's Training, H. R. Brayton, A. and M. College of Texas, College Station, Tex.

*July 21-23, 1941—MARITIME FIRE CHIEFS ASSOCIATION. Annual Convention, Edmundston, N. B. Secretary-Treasurer, Charles A. Cunningham, St. John, N. B.

*July 21-23, 1941—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. Annual Convention, Wausau, Wis. Secretary, A. V. Simon, Ladysmith, Wis.

*Aug., 1941 (tentative)—DOMINION ASSOCIATION OF FIRE CHIEFS. Annual Convention, Peterborough, Ont. Secretary, Chief James Armstrong, Box 56, Kingston, Ont.

*Aug. 4-5, 1941—NEW YORK STATE FIRE FIGHTERS' ASSOCIATION. Annual Convention, Syracuse, N. Y. Secretary, Frank A. Emden, 1403 Mather Ave., Utica, N. Y.

*Aug. 12-15, 1941—VIRGINIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Staunton, Va. Secretary, R. B. Barker, Newport News, Va.

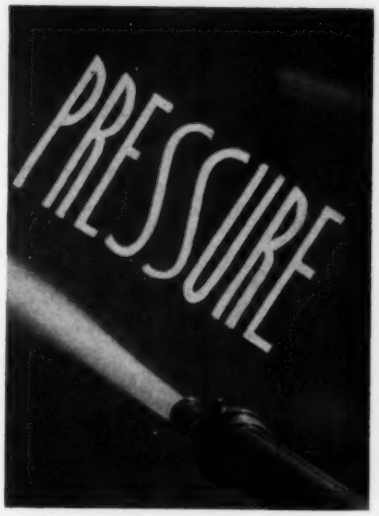
*Aug. 16-17, 1941—VERMONT STATE FIREMEN'S ASSOCIATION. Annual Meeting, place not fixed, Secretary-Treasurer, W. H. Adams, Vergennes, Vt.

*Aug. 19-22, 1941—FIREMEN'S ASSOCIATION STATE OF NEW YORK. Annual Convention, Geneva, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

*Sept., 1941—NEW HAMPSHIRE STATE FIREMEN'S ASSOCIATION. Annual Meeting, place not fixed. Secretary, A. G. Robinson, Manchester, N. H.

*Sept. 12-13, 1941—NEW JERSEY STATE FIREMEN'S ASSOCIATION. Annual Meeting, Atlantic City, N. J. Secretary, Evan F. Benners, R. 602, 24 Branford Place, Newark, N. J.

*The notices marked with an asterisk are either appearing for the first time or have been changed since the preceding issue.



PRESSURE is always assured and ready for any emergency if the water mains in your city are free from incrustation. And . . . incrustation exists in mains that have been down for many years.

National Water Main Cleaning Company are specialists in making old mains good as new and we do the job without disrupting service. It's amazing what a difference a water main cleaning job will make in hydrant pressure.

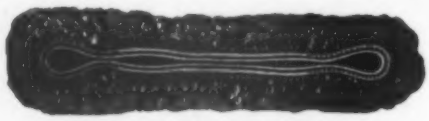
RECOMMEND A NATIONAL CHECK-UP of the water distribution system in your locality . . . everyone will benefit by *clean* mains. Adequate pressure is assured and insurance rates lowered materially. Send for interesting information.

NATIONAL

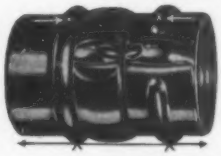
WATER MAIN

CLEANING CO.

30 CHURCH ST., NEW YORK, N.Y.



This is the new LIGHT WEIGHT
BI-LATERAL FIRE HOSE



This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

BI-LATERAL FIRE HOSE COMPANY
20 N. Wacker Drive Chicago, Illinois

NOZZLE PRESSURES
ARE SHOWN
CONTINUOUSLY AT THE PUMPER
BY THE MJL
PRESSURATER

AN ESSENTIAL DEVICE FOR EFFICIENT FIRE FIGHTING

Write for Descriptive Bulletin
MOREY & JONES, LTD.
922 So. Hemlock St. - - Los Angeles, Cal.

10" Aluminum Turtle Gong

HARRINGTON
FIRE ALARM SYSTEMS

Recognized as standard in their high quality and dependability of service since 1921. Cover of the gong shown can be removed for inspection without disturbing the mechanism. Strongly built—light in weight.

HARRINGTON SIGNAL CO., Moline, Ill.

ANNOUNCEMENT

We have just completed the designs, and will be prepared to deliver right after the first of the year, two new trailer units.

One weighs less than 3,000 pounds, is capable of carrying at least 800 feet of 1½" hose, has a 100-gallon booster tank, and is equipped with a rugged 200 G.P.M. Sealand Centrifugal Pump. The other unit has a 300 G.P.M. Sealand Centrifugal Pump, and carries 800 feet of 2½" hose.

Both units are light, compact, and easily transportable.

If your department is interested in efficient portable pumps, make sure to write for literature on the above units immediately.

THE SEALAND CORPORATION
Modern Fire Apparatus *Fire Alarm Systems*
Bridgeport, Conn.

WATEROUS
FIRE PUMPS

A complete line of dependable rotary, single-stage and series-parallel centrifugal fire pumps. Built to high quality specifications.

Established 1886

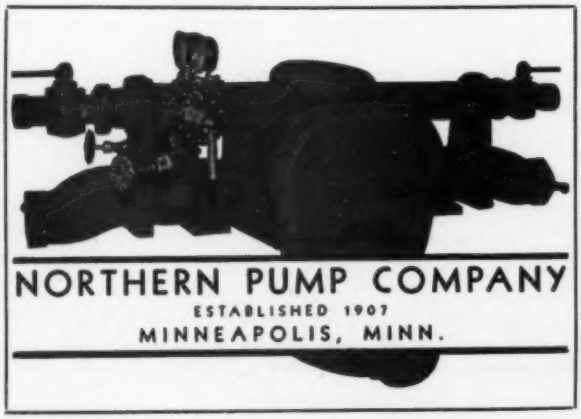
WATEROUS COMPANY, ST. PAUL

HAHN FIRE APPARATUS
Air-Cooled or Water-Cooled
Powered Apparatus
HAHN MOTORS, INC. HAMBURG, PA.

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the Facts
EDDY VALVE CO.
Waterford, N. Y.



NORTHERN PUMP COMPANY
ESTABLISHED 1907
MINNEAPOLIS, MINN.

CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted $5 *per inch. Position Wanted,* $2.50 *per inch.*

FOR SALE

Reasonable. One 350 gallon Seagrave fire truck, 4 cylinder, 110 H.P. motor in good running condition, equipped with one 40 gallon booster tank. Reason for selling—capacity too small for our needs. Brackenridge Borough, Pa. J. N. Wolf, Secty.

Manufacturers' Announcement

New Carrying Arrangement for Portable Electric Plants

The Universal Motor Company, Oshkosh, Wis., has announced a carrying handle arrangement for their new 650-watt and 1,000-watt portable electric power plants. They have also developed a two-wheel dolly for use with these models.

Carbon Dioxide Extinguishers

The C-O-Two Fire Equipment Company, 10 Empire Street, Newark, N. J., has just released an eight-page, two color, illustrated booklet, entitled "In Case of Fire." Described in the booklet are hand and wheel type extinguishers, hose systems, recharging equipment, and sales and service points.

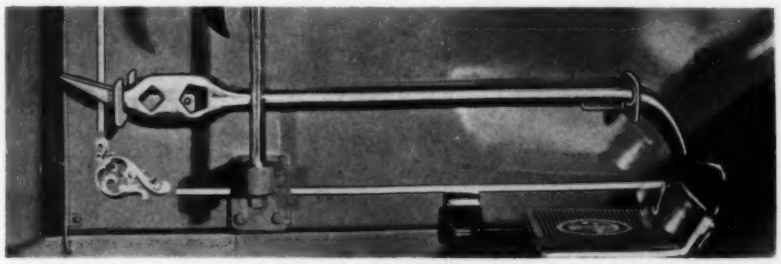
Super-Highway Crash Trucks

Several crash trucks have been furnished recently by the National Foam System, Inc., 1632 Sansom Street, Philadelphia, Pa., to the Pennsylvania Super-Highway. Each truck is equipped with an extension ladder mounted on a turntable for servicing lights in the tunnels and approaches. The trucks each have a wrecking boom for picking up a vehicle and towing it out of the way. A large water tank connected with a power operated pump, provides water pressure for operating the foam generator. The chemicals and generator are found in a compartment as is miscellaneous equipment including stretchers, asbestos suits, oxygen, inhalators and other first aid equipment.

New Multiple-Use Tool

A new five-in-one tool, called the Huxbar, which was invented and patented by Captain Walter C. Huxel, is a door opener for inside doors, an opener for outside doors, a plaster hook, a tin roof cutter, and a window opener. It also performs many other important operations in fire fighting and salvage work, such as removing shingles, metal ceiling, weatherboarding, baseboard and toe strip, shutting off gas meters of any type, and removing tight hydrant caps. It may also be used to release auto wreck victims and in general fire and police rescue work.

In spite of its unlimited uses, the Huxbar is only thirty-six inches long and weighs but 8½ pounds. It is supplied with brackets for mounting on the side of the pumper, hook and ladder, and salvage truck, where it is easily accessible. A descriptive folder on the Huxbar may be obtained by writing Walter C. Huxel & Co., 230 East Front Street, Cincinnati, Ohio.

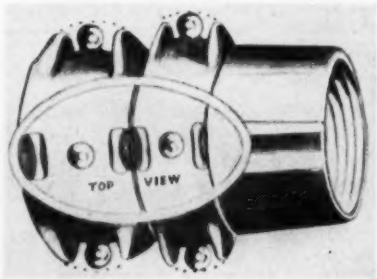


The Huxbar Mounted in an Out-of-the-Way Yet Readily Accessible Location on a Truck

New Guard Lug Fire Hose Coupling

A new type of coupling that can be used with any type of spanner has been announced by the Wooster Brass Company, 1415 East Bowman Street, Wooster, Ohio. No special spanner need be furnished in order to use this new Guard Lug coupling in the same line of hose where pin lug or rounded ear lug type couplings are now used.

The Guard Lugs provide an ideal hand grip and eliminate possible injury to hose jackets regardless of how tight hose lines may be packed in hose beds. The guides on either side of the spherical lug enable the coupling to ride over obstructions without catching. The tapered and rounded surfaces eliminate the possibility of snow or ice formations interfering with proper spanner functions.



The Wooster Guard Lug Coupling

A Super-Highway Crash Truck Showing Part of Its Equipment and Compartments

New York Chiefs to Meet in May

The New York Fire Chiefs' Association has set the tentative date for its 1941 convention May 19, 20 and 21. The convention will be held at Utica, N. Y.

Information on exhibits may be secured from Gordon R. Mullins, 305 East 88th Street, New York, N. Y.

V. C. Stanley Honored

At the regular meeting of the Fire Chiefs Club of Massachusetts, held in Boston on November 20, Vincent C. Stanley, President and General Manager of The Gamewell Company, Newton Upper Falls, Massachusetts, was made an Honorary Life Member of the Club. Mr. Stanley has been active in the field for many years.

FALSE ALARMS

"He's quite handy to have around; he used to be a juggler with the circus, you know!"

WHY FIRE TRUCKS ARE RED

Three and three are six; six and six are twelve; twelve inches make a ruler; a ruler is a Queen; a Queen rides the seas; the seas have fish; fish have fins; the Finns fought the Russians; the Russians are red; fire trucks are always rushin', and so they are red.

Then there was the absent minded business man who sent his correspondence over to the golf club and then went to his Secretary's and played a round.

COOL AND CALM

A hotel was on fire and the guests, gathering out in front were watching the flames.

"Nothing to get excited about," one traveling man was boasting, "I took my time about dressing. Lit a cigarette. Didn't like the knot in my tie and retied it. That's how cool I was."

"Fine," remarked a bystander, "but why didn't you put your pants on?"

The modern optimist is the fellow who believes his wife has quit cigarettes when he starts finding cigar butts around the house.

BEGGED FOR FORGIVENESS

"How'd you get along with your wife in that fight the other night?"

'Aw, she came crawling to me on her knees."

"Yeah? What did she say?"

"'Come out from under that bed, you coward!'"

So we named the baby "weather strip" because she kept father out of the draft during the war.

A SIMPLE REQUEST

Salesman (beginning to show his samples): "I'd like to show you——"

Fire Chief (emphatically): "No, no, I'm not interested."

Salesman (eagerly): "But couldn't I just show you——?"

Chief (firmly): "Not a chance. I'm not interested."

Salesman (wistfully): "Well, would you mind if I looked at them myself? I haven't had a chance to see them for three weeks."

Although one swallow does not make a summer, it certainly puts spring in your step.

AND WHAT A MEMORY

The men were in the station house discussing the smoker that was held the night before. Most of the boys had arrived at their homes late, and as a result they had a little difficulty with the wife. Soon the conversation turned to that subject.

"My wife always becomes historical when I stay out late," said Chief Knight.

"You mean hysterical, don't you?" queried Chief Owl.

To which Chief Knight replied: "No, historical. She always digs up my past."

Two heads are better than one, except when one of them has a headache.

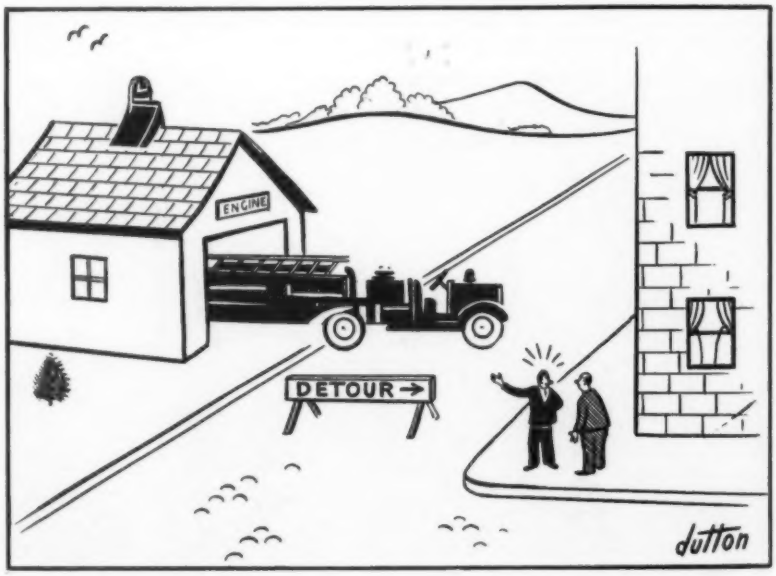
IT WAS A TIE

Bob: "Jones tried to beat a fire truck over an intersection."

Gob: "Did he get across?"

Bob: "No, but they're making one for him."

The perfect golf score has finally been achieved by the nudist who went around in nothing.



"We'll have to use that sign until we can build a house for the new aerial!"

SPECIFY HALE

Superfinish in a Fire Pump? Yes, because a superfinished surface has less friction, wears longer, and is slower to corrode.

Many Hale Fire Pump parts are superfinished.

Write today for the Catalog and Folders on the complete line of Hale Pumps

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

FIREMEN—

Keep Warm and Dry this Winter!

Here's a specially made suit that will give you just that comfort in the most severe weather. Read the description and send your order in at the low price of *only* $22.35

MIDWESTERN

Firemen's Coat and Bunker Pants

Combination Suit No. 101

Coat No. 331 and bunker pants No. 341 . . . any size pants, coat up to 35-in. length . . . equipped with detachable wool linings and the famous Midwestern safety snaps that cannot possibly catch on anything. Material in linings, 86 per cent pure wool; linings edged with reinforced rubberized fabric; coat has two outside pockets with snap fasteners; flexible, elastic inner sleeves for wrists—keeps out water, cold and sparks; corduroy lined collar on coat; pants equipped with cloth crotch pads for pole sliding . . . and many other exclusive Midwestern features that make this extra-serviceable outfit most desirable.

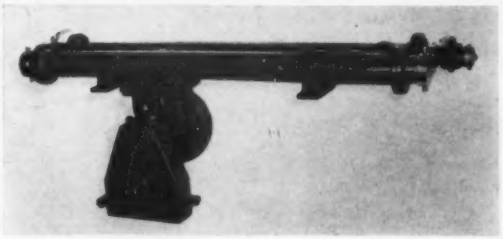
All garments Union Made AFL.

MIDWESTERN MFG. CO.
MACKINAW, ILLINOIS

HEWITT-GUTTA PERCHA
FIRE HOSE

A complete line, including
Wax Treated - Solid Multiple Woven
AND
Single and Double Jacket Hose
Manufactured by
HEWITT RUBBER CORPORATION
BUFFALO, N. Y.
"Territories Available"

Sealand Centrifugal Booster Fire Pump



Patent Applied For

Power Take-off operated. Capacities 150 gallons to 300 gallons. Pressures 120 lbs. to 400 lbs. Manufactured in either single stage or two-stages, easily adaptable to existing apparatus.

THE SEALAND CORPORATION, Bridgeport, Conn.

Cairns "New Yorker" 8-Comb Helmet
The American "Regulation" for Generations

For The Utmost in Value, Specify

CAIRNS

In Your 1941 Budget

For new helmets, in all styles and sizes; for reconditioning old helmets; for firemen's personal equipment of all kinds; for loose-leaf fire records, record forms, etc.—"Come to CAIRNS, America's firemen's headquarters for over 100 years." Write for Catalog 30A.

CAIRNS & BROTHER
444 LAFAYETTE STREET
NEW YORK

Cairns "Drop Brim" Helmet

For those who prefer the smaller type.

AUTOCAR
FIRE APPARATUS

Custom-building to meet local requirements is our Specialty. Let us bid to your exact specifications the next time you are asking for a Proposal, or write now for literature and photographs.

•

THE AUTOCAR COMPANY
BOX FE, ARDMORE, PA.

USE Shuredry SALVAGE COVERS and keep your record good!

3/4 of all the opportunity for improvement lies in more efficient salvage work. Control loss from water damage by the use of SHUREDRY SALVAGE COVERS and thorough drill in their use as covers and catch-alls. SHUREDRY Salvage Covers are light, easy to handle, do not freeze even at very low temperatures and will not crack when folded for storage.

Write to us today for full information and prices.

Fulton Bag & Cotton Mills
Manufacturers Since 1870
ATLANTA ST. LOUIS DALLAS NEW YORK
MINNEAPOLIS NEW ORLEANS KANSAS CITY, KAN.

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FIRE ENGINEERING

DECEMBER, 1940

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First FOR FIREFIGHTERS

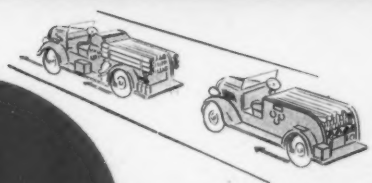
THE first need for successful fire fighting is to get men and equipment to the scene of action—fast! Every fire is an emergency that demands dependable transportation—and FWD apparatus takes first place with fire fighters because it has the performance capacity equal to any emergency—speed that saves precious minutes—power that flattens out the steepest grade—full four-wheel traction that pulls through snow or mud-blocked streets—positive four-wheel safety for sustained fast travel on wet, slippery pavements without hazard to pedestrian or other traffic.

In cities from coast to coast the trend is to FWD's for substantially safer and surer fire apparatus—for the most dependable performance. Available in a complete line of fire trucks—all types and sizes. Write for literature.

THE FOUR WHEEL DRIVE AUTO CO., Clintonville, Wis.
Canadian Factory: KITCHENER, ONTARIO

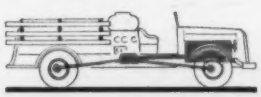
FAST-DEPENDABLE FWD APPARATUS

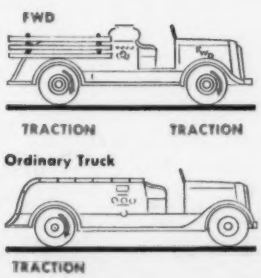
FWD



GREATER HILL-CLIMBING ABILITY—Steep or slippery grades impassable to other vehicles present no problems with all four wheels pulling.

HIGH SUSTAINED SPEED—Slippery streets, corners and other hazards that reduce speed are minimized through more positive driver control, making higher average speeds possible without increasing top maximum speeds.





FASTER GETAWAY—all the weight of the truck and its load are converted into powered traction—no wheel spin on wet and slippery pavements.

GETS TO THE FIRE QUICKER AND SAFER

ANOTHER STEP FORWARD . . .

A New Development by the Fire Hose Manufacturer that first gave you

TWILL-WEAVE • CABLE TWISTED CORDS • WAX & PARA GUM TREATMENT • SEAMLESS RUBBER LINING

ANNOUNCING

FABRIC HAWSER TWIST CORDS.

These new Fabric Fire Hose cords are miniature replicas of the large hawsers used for towing or mooring ships. These new cords possess higher tensile strength than Fabric's famous Cable Twisted cords and are far superior to single-twist cords.

Jackets woven from Fabric Hawser Twist cords are stronger and better suited to resist wear and abrasion.

Fabric Hawser Twist cords greatly improve the results of hydrostatic tests. These cords raise the bursting point, eliminate twist, reduce elongation, and do away with warp.

Fabric Hawser Twist cords plus Twill-Weave form an ideal, smooth backing for the rubber lining and hold friction loss to a minimum.

Fabric Hawser Twist cords easily absorb Fabric's *genuine* Wax and Para Gum solution.

Fabric Hawser Twist cords are available only in Fabric Fire Hose.

For further information, see your Fabric Fire Hose representative or write direct to

FABRIC FIRE HOSE COMPANY

FACTORY • SANDY HOOK, CONNECTICUT